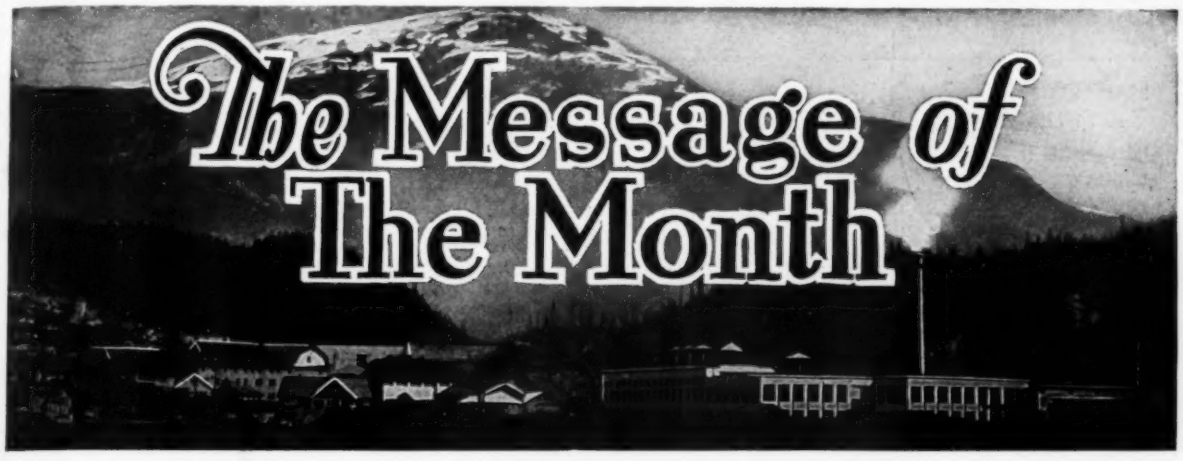


The Integrity of Price Quotations

ONE of the unescapable by-products of wilful **overproduction** is the total collapse of commodity price levels.

The quotation of prices for commodities are merely the expression in one figure of the processes and costs, plus the profit through which the commodity passes, until it reaches the shipping door of the mill and factory.

It is through the medium of prices that the cost of raw material, process of manufacture and the necessary profit on the operations to continue production methods are returned to the producer.

Industry has never prospered except under that system of barter and exchange wherein the seller names the price and the buyer accepts the same.

The outstanding factor of every prosperous industrial period is the fact that during the said prosperous times, the markets were dominated by the sellers of commodities; and every period of depression which this country has suffered has been signalized by the buyer's control of the market on commodities. We are at present suffering a most drastic industrial recession. It is a buyer's market.

The fundamental cause of the industrial recession is **overproduction** of commodities—the wilful continued violation of the principle of demand and supply. More commodities are being produced than the country will consume. Therefore, the control of the markets passed from the producers and sellers of commodities to the buyers and consumers thereof.

And, that condition and this period of depression will continue until the balance is struck between demand and supply.

For the past four years, the paper industry has operated under a buyer's market with the control of its markets in the hands of the buyers.

For the past four years, the producers in the paper industry have foolishly and wilfully augmented the **overproduction** of paper.

With the production of paper at its peak of percentage over the consumption, the consequent collapse of all price quotations and price levels is the result.

Prices are the indices of value.

The stock market at the end of every quarter this year, has made drastic declines. The stock market has been telling the cock-eyed manufacturers of the country that the investing public will not buy nor hold their shares of stock. They are telling them the unmitigated truth—"You are selling your goods below cost and therefore cannot make any earnings from which to pay dividends—hence, we are throwing your securities overboard."

And, that will be the attitude of the investing public until such time as the producers of commodities will stop the building of new mills and the **overproduction** of their wares and turn the market situation from a buyer's market to a seller's market. A seller's market is the absolute requisite to prosperous conditions. But, there can be no seller's market until the **overproduction** of commodities ceases.

Quoted prices on necessary commodities are significant things. They should represent the integrity of the industry and of the quoting producers. The buying and consuming public has lost all confidence in quotations. There is no such thing as the integrity of quoted prices in the

EDITORIAL

paper industry to-day, and as a final proof, we point to the recent, ruthless, unwarranted slashing of bag prices and the demoralization in quotations on every other grade of paper from newsprint to cheap kraft, new low prices for which have all been witnessed since the first of September.

We point to one final truism that in order to establish the integrity of price quotations, there must be integrity in commodity production.

Integrity of quality and integrity of quotation go hand in hand with the integrity of the personalities behind the mill and the product.

Safety Observance Pays Dividends

A LARGE amount of space is taken up in this issue of THE PAPER INDUSTRY with an account of the annual meeting the Paper and Pulp Section of the National Safety Council which held its nineteenth annual congress in Pittsburgh during the week of September 29.

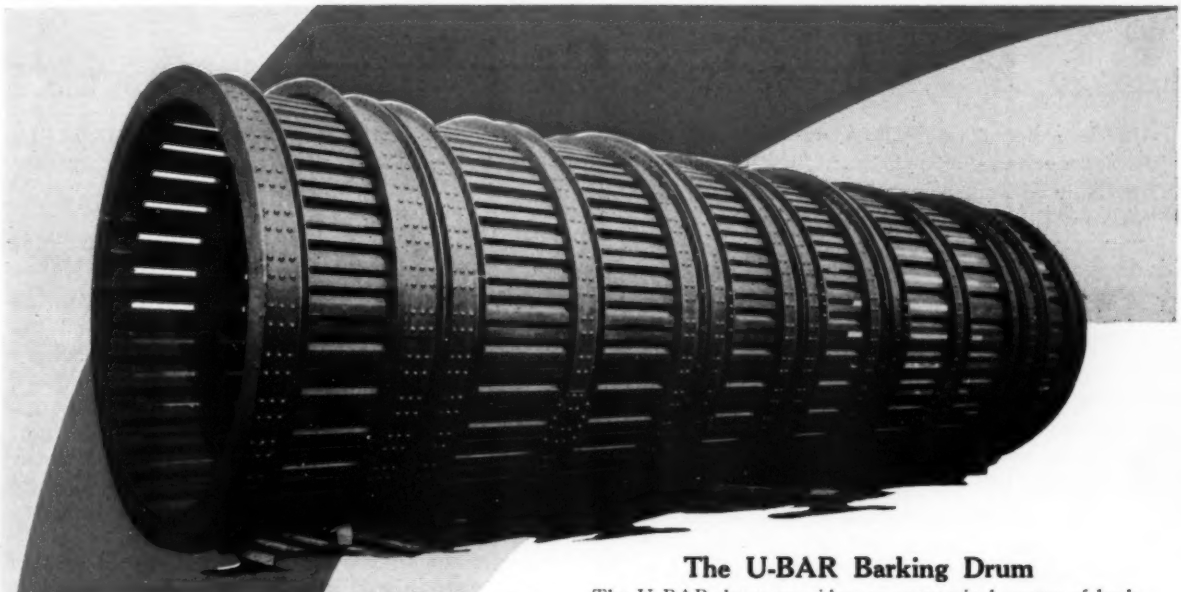
There is scarcely another movement within the paper industry which is so well calculated to pay dividends as the safety movement. It might seem that the industry is already well supplied with technical and service organizations designed either for improvement of processes and product or for financial and commercial ends, but it is difficult to conceive of another agency in the field of educational work from which so much of lasting benefit could be derived as a continuous campaign to make workers conscious of safe practices. Every time an accident occurs to deprive a worker of his ability to stay on the job, it affects not only the productive capacity of the mill but often brings grief and sorrow to the man's family.

Indemnity and compensation laws are all very well in their way, but nothing can compensate a man for the loss of an eye or a limb, and indemnity and compensation constitute a drain upon the financial resources of a company which its directors would prefer to avoid. There is a way of doing this by supporting the activities of the Paper and Pulp Section of the National Safety Council. No matter what the condition may be called, psychological, or what not, the aim of good safety engineering is to develop a state of mind and a habit of life among workers that will lead to the constant observance of caution in places of danger.

It has been suggested that the Paper and Pulp Section of the National Safety Council seek the support of the American Paper and Pulp Association for an extention of a campaign of education in safety among the paper and pulp mills of the United States, which, we may be allowed to say, is something that should have been done long ago. The directors and executives of paper manufacturing plants are by this time generally aware of the beneficient results that have followed the introduction of safety systems in the mills. The good that was likely to accrue was recognized as far back as 1915, when Henry W. Stokes, then connected with the York Haven Paper Company and who later served with distinction as president of the American Paper and Pulp Association, delivered an address at a sectional meeting of the National Safety Council in which he discussed the general safety problem in paper mills, placing emphasis on adequate co-operation between employers and employees in the prevention of avoidable accidents. This is the doctrine which is consistently preached by safety engineers in mills and at meetings for the discussion of safety principles. The chief by-products of the safety education movement apart from the prevention of human suffering and economic loss are greater efficiency, increased production and the development of a fine spirit of co-operation among the workmen.

We should not think it would require much argument to convince the members of the American Paper and Pulp Association that it would be to their advantage to assist in every way possible the growth of the safety movement in their mills. To spread the doctrine of safety as it is being preached by the officers of the Paper and Pulp Section of the National Safety Council will do more than protect human life and make for contented and happy workmen, there is an economic aspect to it which has suggested the title of this article; for manufacturers need not be told that the cheapest way to dispose of claims for damages is to prevent them. And then there is the satisfaction that comes to one from having done something to help his fellow men.

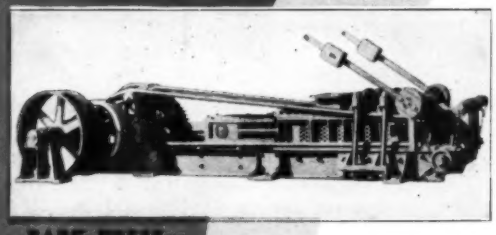
Why then should the mills hesitate to extend the fullest sympathy and support to the eager and enthusiastic band of men who are striving to make paper and pulp mills safe places in which to work. The Paper and Pulp Section of the National Safety Council needs the services of a paid full-time secretary to organize meetings throughout the country to provide programs of papers and discussions and direct generally the educational features of the safety movement. The



The U-BAR Barking Drum

The U-BAR drum provides an economical means of barking both logs and slabs. It has a large capacity, due to the rough interior, the speed of the drum and dependability of operation. U-BARS bark thoroughly, yet do not injure the wood. The minimum speed of a 10 ft. drum is 7½ r.p.m. and is often increased to 10 r.p.m. Installations are guaranteed for 2 yrs. or 6,000 operating hours at 7½ r.p.m. The durability of the drum, chains, sprockets, take-ups and traction wheels, all especially designed, assures continuous operation and maximum output.

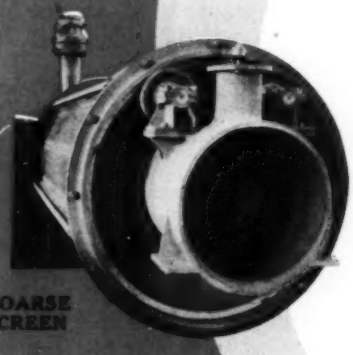
U-BAR drums are handled in Canada and Newfoundland by the Horton Steel Works Limited, Bridgeburg, Ontario.



BARK PRESS

Giant Nekoosa Bark Press

Thousands of pounds of steam are produced yearly from bark pressed by Giant Nekoosa installations. It reduces the water in wet bark, which otherwise would be a nuisance, to 55 percent, almost natural water content. This press is of rugged construction and has a low operating and maintenance cost. Bark from your drums feeds into the hopper. The plunger, armed with cutters for shearing off overflow, rams the bark into a compressing chamber and the water is squeezed out through holes in the walls. The pressed bark may be pushed through spouts to furnaces.

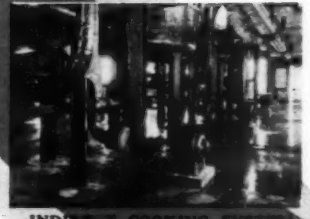


COARSE SCREEN

The F. M. P. Coarse Screen

The inside of the F. M. P. Screen is so baffled as to propel pulp spirally through 80 feet of screening under strong spray. The result is that rejections are free of fine fibre. The end rim-track is suspended on supporting rollers, thus eliminating trunnions underneath or shaft through the center, and allowing stock to flow through freely. The F. M. P. Screen is supplied with direct connected motor eliminating counter shaft and belt.

These screens are handled in Canada by the Port Arthur Shipbuilding Company, Port Arthur, Ontario.



INDIRECT COOKING SYSTEM

Morterud System of Indirect Cooking

The Morterud System of indirect cooking with positive circulation increases the quality of the pulp and reduces waste. Steam heats the liquor in a heater instead of being allowed to enter the digester. A high grade of pulp is produced, as the liquor is forced through the heater and spread evenly through the digester. Cooking time is reduced, as the pressure and temperature are brought up quickly. The liquor is not diluted and less steam and equipment in recovery room is possible. The steam condensate may be pumped back into the boilers.

Helin Beater Filing

Use Helin Beater filling for high, economical production. It is much like basalt lava in action, but costs less. Hydrates pulp twice as fast (by test) as knives and does not cut the fibres. It is made of cast iron, in shapes to fit any beater, and has a porous lava-like surface which beats thoroughly and quickly.

We will be pleased to send you information, blueprints or quotations on any of these products.

FIBRE MAKING PROCESSES, INC.

Willoughby Tower, Chicago, Illinois, U. S. A.

E D I T O R I A L

American Paper and Pulp Association will shortly be approached for assistance in the movement, for financial support which it is to be hoped will not be withheld in such a praiseworthy cause.

The Vertical Turbine

THE question is beginning to be asked, Will the vertical turbine come back? our contemporary **Power** having stated it in a recent issue. Readers of THE PAPER INDUSTRY who have followed the very interesting and informing series of "Lessons in Steam Plant Practice" by Charles J. Ryder, which began in the April issue, should be in a position to regard new developments in turbines with a fine understanding of the subject.

More than any other power plant equipment, steam turbine designs have been developed, discarded, and redeveloped, according to **Power**, the writer of the editorial recalling that Hero was the first to create the reaction turbine, and Branca the impulse type, as set forth in the introductory article of our series. The turbine was soon thereafter forgotten, and it was not until the development of the steam engine that it again came into use.

Continuing with a brief historical review of the subject, the writer in **Power** notes that high pressure turbines built in the time of Gustaf De Laval were discarded only to be redeveloped in the present era. Several of the earlier power plants bled steam from the turbines for feedwater heating, but here again the idea was dropped, and today it is practically a universal practice. Most of this abandonment of early turbine forms, and the subsequent redevelopment, was the result of a lack of advancement in parallel machine design or mechanics. In other words, the original creation was ahead of its time.

Early central station turbines were vertical machines. They were rugged and possessed many desirable features, such as small floor space per kilowatt capacity, easy starting, etc. As sizes increased, one of the difficulties which largely influenced the abandonment of this type in favor of the horizontal unit was concerned with the thrust bearing. The Kingsbury thrust bearing has been developed since the time of the vertical unit. This bearing as mentioned in **Power** has given satisfactory service in vertical waterwheels under much heavier loads than the old step bearings were required to withstand.

The foregoing brief study of development in turbine forms, especially as regards the Kingsbury thrust bearing, makes it easy to agree with **Power** that there may be a redevelopment of the vertical turbine to meet demands of greater capacity per unit of floor area.

A Move for Stabilization

WITH unity of purpose and a full realization of the problems that have confronted the kraft paper situation, the National Kraft Paper Manufacturers' Association and the Southern Kraft Manufacturers' Association each took action at meetings just held in Chicago, to inaugurate policies which will undoubtedly bring about sound progress and stability, by deciding to place before a representative committee of the industry all of the questions now confronting it.

A discontinuance of the practices of giving special discounts of any kind to anybody, of granting protection and of accepting blanket orders was felt to be imperative. This action will certainly have an immediate stiffening and stabilizing effect on the market, which will be further strengthened and enhanced by the work of the committee of prominent executives who have been invited to study the problems of the industry under the temporary chairmanship of D. C. Everest, with the view to working out a practical program which will be acceptable to all groups in the industry, and which will provide relief from the evils which trouble it.

By this action, the kraft paper situation has manifested signs of improvement. The industry has stiffened its backbone and regained its nerve. It is no longer listening to loose talk and pessimistic opinions, and has made a definite decision to run its business with the dignity and stamina that its importance demands.

The industry has been suffering from growing pains, and these in a business with establishments scattered from coast to coast, and whose production runs well over 3,000 tons per day, can cause a great deal of trouble for both the manufacturer and the paper merchant whose business is a business and not a gamble.

The industry has undergone quick changes and rapid growth, much too rapid for proper adjustment. Neither the manufacturers nor merchants have been able to keep step with the changing conditions. The result has been bewilderment, distress and an "every man for himself" attitude that has promoted unwise practices and destructive competitive conditions which were harmful alike to both merchant and manufacturer.

Now the apparently demoralized manufacturers have suddenly pulled themselves together, seen these troubles in their true light as overrated and overdrawn, and turned squarely around to fight for the betterment of their industry and its economic stabilization.

THE PAPER INDUSTRY

REG. U. S. PAT. OFF.

Vol. XII OCTOBER, 1930 No. 7

Technical Advances in the Swedish Pulp Industry

Conservation of Forest Resources, Co-operative Systems for Wood Utilization, Technical Developments in Pulp Manufacture and Recovery Processes

IN an address before the French Society of Paper Engineers in Paris recently, Gösta Hall, who resigned his connection as chemical engineer at the Korsnäs Wood Pulp Mills on September 1 to take a position with the Swedish Pulp Company, the Krueger combine, as manager of their central laboratory at Svartvik, which is now under construction, gave a most informing account of logging operations and wood pulp manufacture in Sweden.

Mr. Hall is well-known to the paper industry in this country, having been at one time connected with the technical department of the American Writing Paper Company. Aside from his managerial duties with the Swedish Pulp Company, Mr. Hall will also act as technical adviser for the department of sales, a position for which he is eminently well fitted. THE PAPER INDUSTRY is indebted for the text of Mr. Hall's address before the French Society of Paper Engineers to its Paris contemporary, **Le Papier**, and to **Der Papier-Fabrikant**, Berlin.

A Swedish sulphite alcohol factory

An American commercial attaché who had made a profound study of the Swedish wood-using industry set up in his report the analogy between this industry and the pork-packing industry in the United States. He said: "The only waste in the Swedish wood industry is the shrinkage of the wood—the only waste in the American packing industry is the squeal of the pig."

In the introductory part of his address, Mr. Hall gives an excellent description of the natural resources of the country that have placed Sweden among the world's foremost producers of wood pulp and other forest products. He began by calling attention to Sweden's exceptionally favorable resources for the creation of a great and expanding industry based on the use of wood as a raw material. More than half of the land surface is covered with forests which have an area as extensive as the whole of Great Britain. The exploitation of these vast forests is made easy by a network of rivers which afford a natural means of transporting the wood and at the same time represent a great source of water power for the industry.

Unique System of Rivers

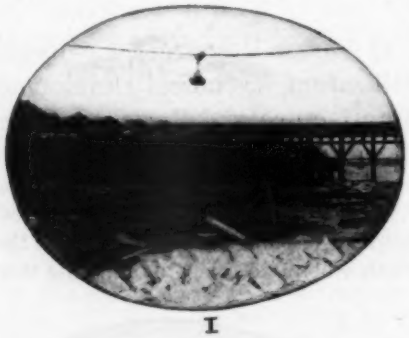
The system of streams and rivers adapted to the floating of logs which is found in Sweden is unique throughout the entire world. The region of the country toward the north where the

Teal
35

forests are chiefly concentrated is long and narrow and is broken up in more or less parallel lines by numerous rivers which have their sources in the mountains to the west and flow in an easterly direction to the Gulf of Bothnia which is an extension of the Baltic Sea. Figure 1 gives some idea of the course of these avenues of transportation and their branches.

During the winter when the earth is covered with snow and the rivers are frozen, the felled trees are hauled to the rivers and piled. In the spring with the approach of warmer weather when the ice on the river begins to melt, the logs are floated and carried down the stream to sawmills and pulp mills, which are located as a rule near the coast. As a consequence of the milder climate on the coast, the ice begins to melt there first, the thaw slowly extending toward the sources of the rivers in the mountains of the northwest. If the reverse were the case as happens for instance in northern Russia, where the rivers flow in a northerly direction, serious floods would result and render impossible the

Figure 1



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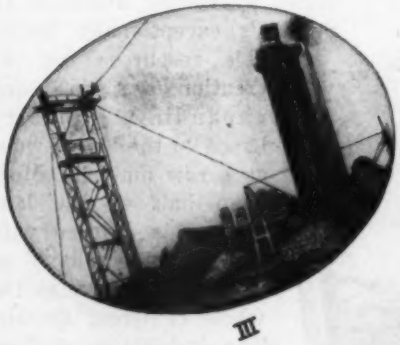

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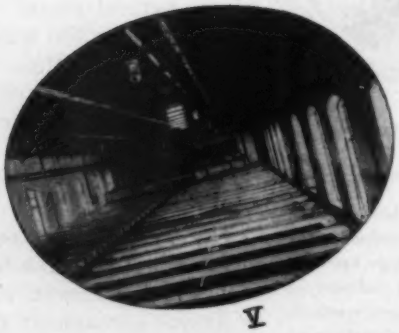

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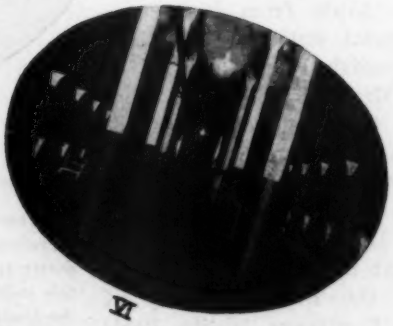

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Views in the Korsnas Sulphite Mill

Fig. 2—I, Wood yard; II, Sulphite digester (200cbm.); III, Tower for cable conveyor (left) and acid towers (right); IV, Blow pits; V, Riffler; VI, Drying Machines

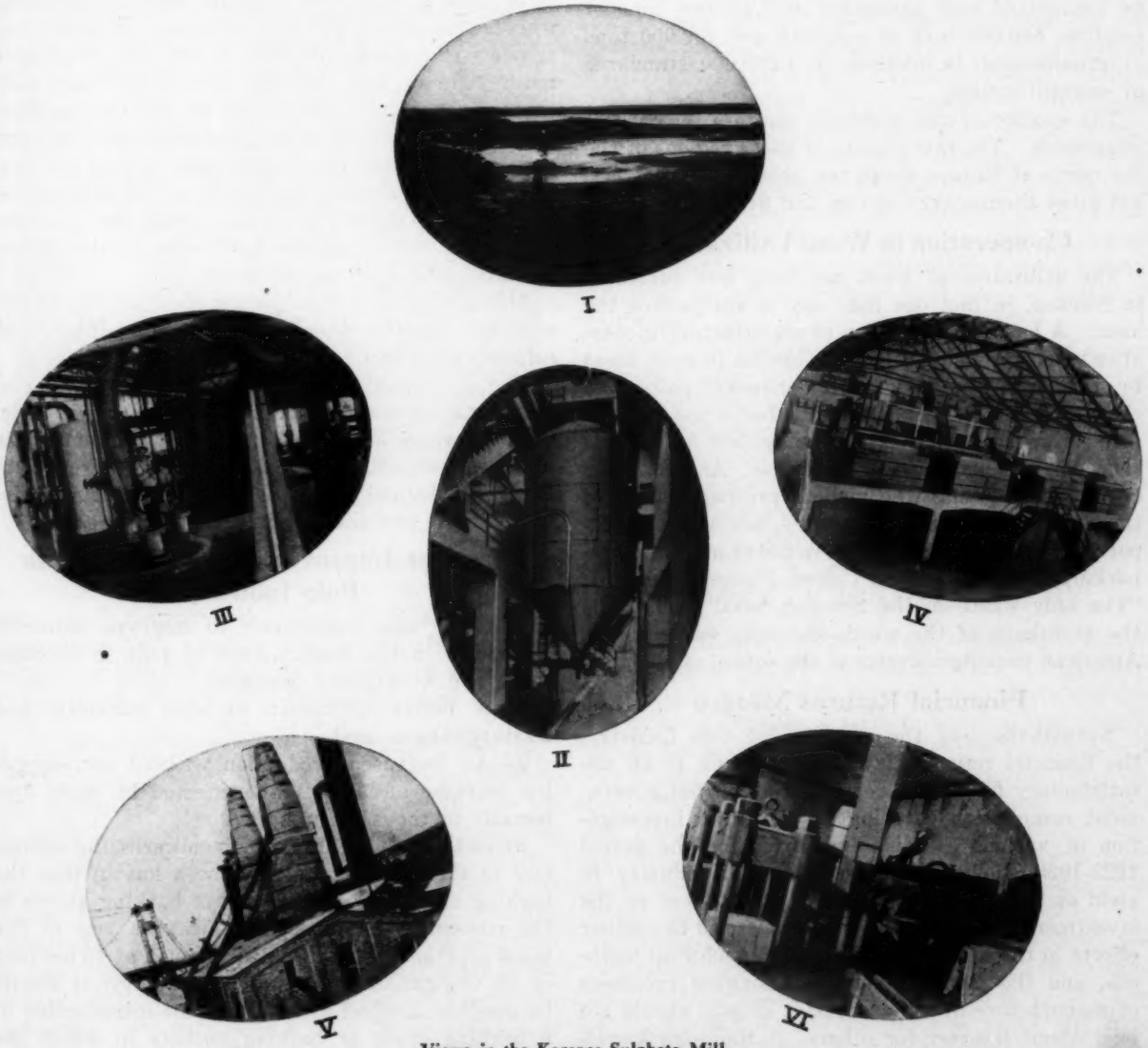
transport of wood according to the system actually used in Sweden. This method of bringing the logs from forest to mill is one of the pillars of a great organization which has been developed for the rational utilization of the Swedish forests. The combined length of the rivers on which wood is floated is 32,000 kilometers or 20,000 miles; and it has been estimated that not less than 160 million logs of various sizes pass down these rivers annually. The regulation and development of the rivers necessary to permit the flotation of the logs according to modern principles entails a heavy expense which is estimated at 60 to 70 million kroner (approximately $15,000,000 to $18,000,000). Notwithstanding this apparently high investment, the cost of floating the wood represents only one-quarter to one-fifth the cost of transporting wood the same distance by rail.

Economic Importance of the Swedish Wood Industry

The importance of the wood industry to the prosperity of Sweden becomes evident when it is known that more than 50 per cent of the value of exports of the country represent products of wood. Sweden also enjoys a dominant position in the world's markets through her exports of pulp, as is shown in the following table of export figures.

EXPORTATIONS OF PULP BY DIFFERENT COUNTRIES IN RECENT YEARS

	Exports in Metric Tons			Per Cent of Exportation		
	1925	1927	1929	1925	1927	1929
Sweden	976,542	1,206,626	1,451,294	44.3	48.1	49.0
Canada	526,229	526,684	518,330	23.9	21.0	17.5
Finland	294,318	355,006	469,676	13.3	14.2	15.8
Norway	236,840	227,840	257,539	10.7	9.1	8.7
Germany	172,519	189,653	265,464	7.8	7.6	9.0



Views in the Korsnas Sulphate Mill

Fig. 3—I, Log pond; II, Rotary sulphate digester (30cbm.); III, Diffuser room; IV, Screening; V, Lime kilns; VI, Cutter and bale presses

It will be seen that Sweden's forest resources constitute the real economic backbone of the country. It has been the principal care of the authorities to conserve and protect the forests and to assure their rational utilization, the precautions which they exercise in these respects being perhaps greater than those of any other country.

A seven-year intensive valuation or census of Sweden's forest resources ended last year. This valuation was based on systematic measurements all over the country, and the inquiry was expected to give an exact answer to the question whether the wood cut exceeded the annual growth. Happily, the result showed that the forest resources were greater than they were generally believed to be. It would appear that the annual growth alone would be sufficient to provide not only the great quantities of wood consumed for domestic purposes, but also for an amount of pulp estimated at 1,100,000 tons of sulphite, 600,000 tons of sulphate and 400,000 tons of groundwood, in addition to 1,000,000 standards of sawmill lumber.

The quality of the northern conifers is the best imaginable. The raw climate of these regions of the far north of Europe slows the growth of the trees, but gives them a very strong and firm fiber.

Co-operation in Wood Utilization

The utilization of wood has been well perfected in Sweden, in fact one may say it approaches the ideal. A happy combination of manufacturing operations that provides for the production in most cases by the same firm of lumber, chemical pulps and charcoal has made it possible to effect a use of wood on a large scale that is almost perfect as regards the complete utilization of the tree. An American commercial attaché who made a profound study of the Swedish wood-using industry, set up in his report the analogy between this industry and the pork-packing industry in the United States. He said: "The only waste in the Swedish wood industry is the shrinkage of the wood—the only waste in the American packing industry is the squeal of the pig."

Financial Returns Meagre

Notwithstanding the progress of this industry, the financial returns from it have sunk to an unsatisfactory figure. A report by an official government commission covering an impartial investigation of various Swedish industries for the period 1923-1925 showed the Swedish wood industry to yield an average return of only 3.2 per cent on the investment. This condition of affairs led to further efforts in the direction of improving technical methods, and the means taken to rationalize processes of manufacture in the production of pulp should not be without interest for others. A thorough knowledge of the technique and economics of pulp manufacture is necessary for a proper understanding of the measures taken and a brief resumé of the subject may be given.

The Development of Technical Methods in Pulp Manufacture

The forests of Sweden contain perhaps four times more coniferous than deciduous trees, which is explained by climatic conditions. Deciduous wood is not of much importance from the pulp manufacturing point of view. The conifers are practically limited to two species, a spruce, *Picea excelsa*, and a pine, *Pinus Sylvestris*. The two species occur in about equal quantities, and they seem to have the same chemical composition, with this difference that the pine has two to three times the resin content of the spruce. As a consequence of this it is necessary to treat the two kinds of wood by two totally different processes for the separation of the fiber. With spruce, the acid sulphite process is used, whereas the pine requires an alkaline treatment, the sulphate or the soda process. In all cases, the maximum yield of pulp represents approximately half the weight of the wood. So far as the sulphite process is concerned, where the chemicals, sulphur and limestone, are relatively cheap, it does not pay to reclaim the active components of the cooking solution. It is quite the contrary with the sulphate process in which sodium hydroxide is the active chemical, and must be recovered.

(*Mr. Hall at this point gave a short resumé of the ordinary operations of cooking by the sulphite and sulphate processes.*)

The accompanying illustrations (Figures 2 and 3) represent views in Korsnäs pulp mill, near Gefle, Sweden, where Mr. Hall was employed. The details of equipment will give an idea of the differences in the two principal processes of manufacturing pulp, the sulphite and the sulphate.

Efforts at Improvement in the Swedish Pulp Industry

When it was undertaken to improve economic conditions in the manufacture of pulp in Sweden, two ways were found possible:

1—A better utilization of raw materials and waste products, and

2—An increased production without corresponding increase of labor, to be effected by more systematic methods of manufacture.

From the first, in that which concerns the utilization of the wood, it had long been known that the barking of the wood by means of barking knives in the customary Swedish way meant a loss of the wood substance amounting to as much as 15 per cent of the weight of the wood. Accordingly it should be possible to effect a saving by the introduction of a barking drum or barking pockets in which the sticks rub against each other, the bark being removed by friction. Unfortunately, this method is

not satisfactory in the manufacture of higher grades of unbleached sulphite, which is the case in most of the Swedish mills. If dry wood is used, small bark particles find their way into openings in the ends of the sticks caused by the pounding and rubbing of the logs against each other. This will lead to dirt specks in the finished pulp. Furthermore, a brown coloration is imparted to the surface of the wood

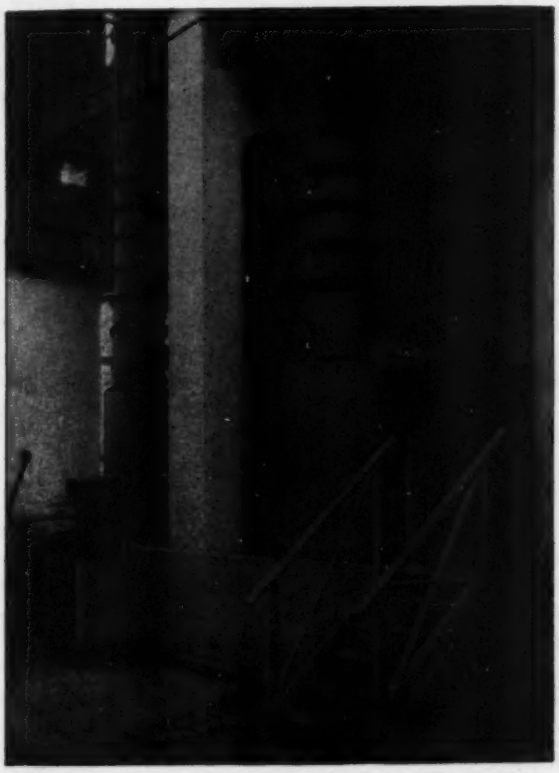


Fig. 4—Distillation column for production of ethyl alcohol from waste sulphite liquor

which is not removed in the cooking process. In addition, this layer of the wood is more difficult to cook than the rest of the wood. This has therefore to be taken into consideration when it is desired to produce a pulp of good light color, which can only be obtained when knife barkers are used.

Waste Liquor Recovery Processes

As already stated, approximately 50 per cent is the maximum yield of pulp from wood, the remainder being dissolved in the cooking liquor. In the sulphate process, efforts were made in the beginning to utilize the dissolved organic matter as a source of heat, in order to effect economies in the recovery of the sodium compounds. By contrast, in the sulphite process in which much more dilute cooking liquors are used, the dissolved substances remained for a long time a total loss. Despite the efforts of a large number of scientists and engineers to develop a method for the economical employment of this part of the wood, no satisfactory solution of the problem has yet been discovered. Use is made of the spent liquor or residuary substance of it in the manufacture of a great many materials, dyestuffs, tannins and sulphite briquettes, for example, but the only method which has proved of practical value is a process developed by Swedish engineers for the manufacture of ethyl alcohol from the waste sulphite liquor. As is well-known, wood contains considerable amounts of various carbohydrates which are dissolved in the cooking operation. Some of this, approximately 6 to 7 per cent of the weight of the wood, is capable of being fermented to yield alcohol. In a general way, it may be said that each tree yields a liter of alcohol.

During the world war when Sweden was by its geographical position isolated from the rest of the world, and when the importation of gasoline was rendered absolutely impossible, the Swedish pulp industry was encouraged to start factories for the manufacture of sulphite alcohol to be used as a motor fuel. As a result no fewer than 22 sulphite alcohol plants were erected with a capacity of 20,000,000 liters of 95 per cent alcohol annually (approx. 5,000,000 gals.). In fuel value this quantity corresponds to 9,500,000 kilograms of gasoline. Through improvements in the method of manufacture it is possible to obtain an ethyl alcohol of the highest degree of purity, that is now marketed for a wide variety of uses, including beverage and general technical purposes.

Researches are continually being made to discover a method that will permit a profitable use of the dissolved lignin but the difficulties have been found to be almost insurmountable by reason of the great dilution of the spent liquor; in order to obtain one kilogram of dry substance nine kilograms of water have to be evaporated.

Leather Packing Advice

It often is best not to ask a manufacturer to punch holes through leather packing. This is especially true if it is intended to keep the packing in storage for a while because even the best leathers shrink or change shape so that after a while the holes will not match. When the user finds that the holes do not match the bolts, he of course is inclined to blame the manufacturer, whereas the manufacturer may not be to blame at all. Therefore unless the packing is to be used immediately it is better for the user to cut out the bolt holes himself.

Furthermore, when giving the manufacturer instructions regarding punching bolt holes be certain that the instructions are complete and accurate. Too often, instructions are meagre and vague and cannot be followed by the manufacturer with assurance. He finds it necessary to ask questions or to call for a template.—W. F. Schaphorst.

Lessons in Steam Plant Practice

Lesson VII—Natural Drafts

By J. CHARLES RYDER

Champion Fibre Company, Canton, N. C.

These lessons in Steam Plant Practice are being published in THE PAPER INDUSTRY by arrangement with the Champion Fibre Company, Canton, N. C. They are a part of the general educational course conducted by this company under the direction of J. Norman Spawn, educational director.

WE are now to consider the very interesting and much misunderstood—and to many people the somewhat mystifying subject, of drafts. We say a chimney "draws" or "does not draw" and we think of draft as "a pull," whereas it is a push rather than a pull. If we would keep that fact in mind, draft would be a whole lot less mysterious and we would avoid a number of mistakes in connection with drafts.

Draft is one of the misused things in a boiler room and in order to get a better understanding of it we should understand the cause of winds and the physical laws governing the action of fluids.

Ordinarily when we use the term fluid we think of a liquid, water for example. All liquids are fluid but all fluids are not liquid. Anything that will flow is a liquid. When we are speaking of fluids we have in mind liquids and gases.

There was a time when electricity was thought to be a fluid and we frequently hear people call it "juice."

There are several ways to measure draft, the simplest is with a U tube (Fig. 22), using water, oil, or mercury in it and measured with a scale graduated to tenths of an inch. To read this gauge, set the water in both legs at zero in the center, then the measured distance from the lower level to the upper level will be the draft in inches of water after the one leg is connected to the furnace. Be sure to measure in both legs at the bottom of the meniscus, when using water or oil, and at the top when using mercury.

As stated before, draft is a push, because the cold air rushes in below and pushes the hot air up the chimney, it does this in an effort to establish equilibrium between the air inside and the air outside the chimney. As long as we keep heating the incoming air, and thereby keep the chimney full of hot air, nature will continue in her efforts to establish equilibrium and we shall continue to have draft. The force that is trying to go up the chimney is greater, for the time being, than that which is trying to go down the chimney. The one force will counterbalance the other, and there will be equilibrium unless we keep pressure in the chimney below that of the outside air surrounding the chimney.

From this we must conclude that a chimney or a stack is a device for upsetting equilibrium and making nature work for us.

The draft power of a stack varies as to the square root of the height.

The capacity or horsepower rate varies directly as the effective area.

Gas will expand or contract one per cent of its volume for each 4.916 degrees F. This means if we take a cubic foot of air at 70 degrees into our furnace and after passing up through the fuel bed it will be heated to 2,200 degrees and expanded 433 per cent of its volume.

$$2200 \div 4.916 = 447$$
$$70 \div 4.916 = 14$$
$$433$$

This means that our cubic foot of gas has expanded to 4.33 cubic feet, which shows there must be ample furnace volume to take care of the expansion of the gases, or the brick work will suffer. Clean, smooth furnace walls are necessary to economical operation. If clinkers are hanging on the furnace walls, they occupy space that rightfully belongs to the expanding gases. This puts an additional load on our stack, because we crowd the furnace with air and coal to hold the stream pressure up and thereby increase the volume of gases going into the stack; whereas if the furnaces are kept clean and smooth, the gases will flow better and have more time "to do their stuff," and not crowd the stack, because the gases will have contracted, due to their lowered temperature and we will then enjoy good draft.

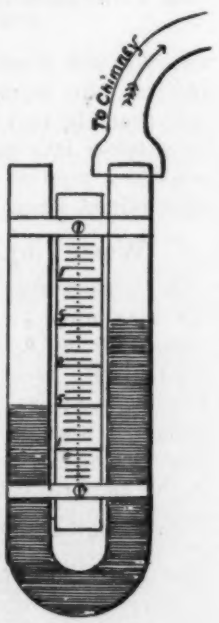


Figure 22

Artificial Draft

We may use artificial or mechanical means to make the wind blow through the fuel on the grate, across the heating surfaces of the boiler, and up the chimney.

Artificial draft may be either forced or induced, depending upon whether we blow the air

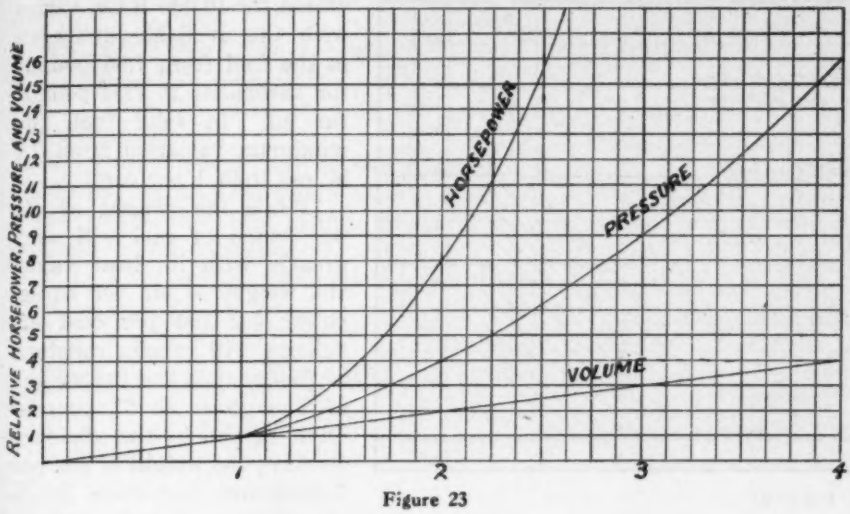


Figure 23

When we increase the speed of a fan, we increase the horsepower required to deliver a unit volume of air.

The horsepower varies as the cube of the speed, the pressure as the square of the speed, and the volume of the air delivered directly as the speed. This means that if the speed is doubled, the volume is doubled, the pressure is increased four times and the horsepower is increased eight times.

This is quite an item when running a fan with a non-condensing engine or turbine.

Figure 23 shows these relations graphically. Let us assume that a non-condensing engine is driving one of our fans and that its steam consumption rate is 35 pounds per horsepower per hour and that it is direct connected to the fan running at 100 r.p.m. The volume then is 100 units of air at a pressure of one inch of water, and developing 100 horsepower per hour and the steam consumption will be for these conditions 3,500 pounds per hour (35×100=3500). Now if we double the speed to 200 r.p.m., the volume will be 200 units of air and the pressure will be four inches of water (2×2=4), neglecting internal friction of the air, and the horsepower required to drive the fan will be 800 (2×2×2=8). The steam consumption then will be 28,000 pounds per hour (35×800=28,000).

It always pays to hold the draft and air supply fans to the lowest speed possible consistent with good operation—that is, the right CO_2, and not melt the furnace walls.

Figure 24 by Mr. Klopp illustrates the ratio of

into the air duct up through the grates into the furnace, or draw the gases away from the boiler and blow them through the breeching and up the chimney. We may describe forced draft as a push and induced draft as a pull, although that would not be a strictly accurate way of differentiating between them. The gases are blown out of the induced draft fan, creating a partial vacuum within the fan. To satisfy this partial vacuum, atmospheric pressure pushes air through the grates and the fuel, across the heating surface of the boiler, through the flue and into the fan, so that in the case of induced draft the air is caused to flow or blow by atmospheric pressure. The same is in natural draft, the induced draft fan merely substitutes for a chimney.

We may produce artificial draft by means of steam blowers and there are all sorts of these and other contrivances on the market, but when we speak of artificial draft we have a fan in mind.

By forced draft we mean the application of pressure beneath the grates in excess to atmospheric pressure. However, there must be sufficient stack or induced draft to carry off the waste gases, and to maintain enough vacuum within the boiler passes to cause the gases to flow across the heating surfaces. More than this is unnecessary and undesirable.

Fan Operation

There are three definite relations with regard to economy in fan operation which we should always bear in mind; these are, volume, pressure, and horsepower.

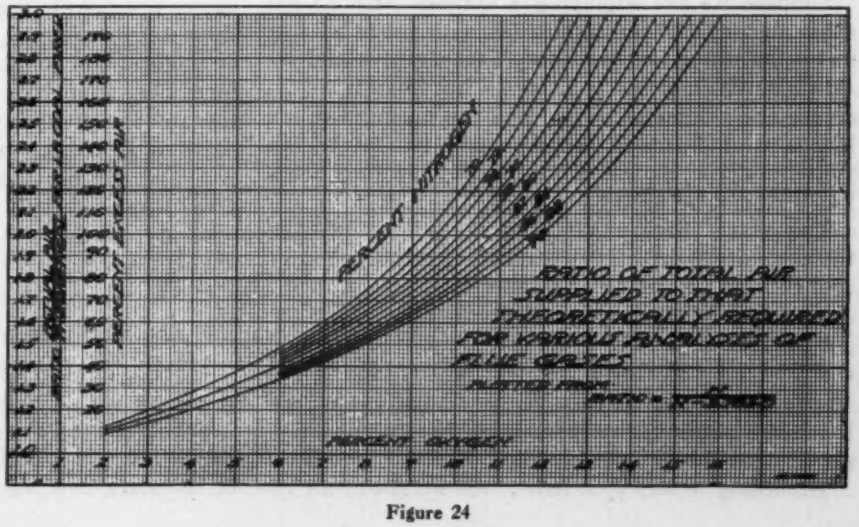


Figure 24

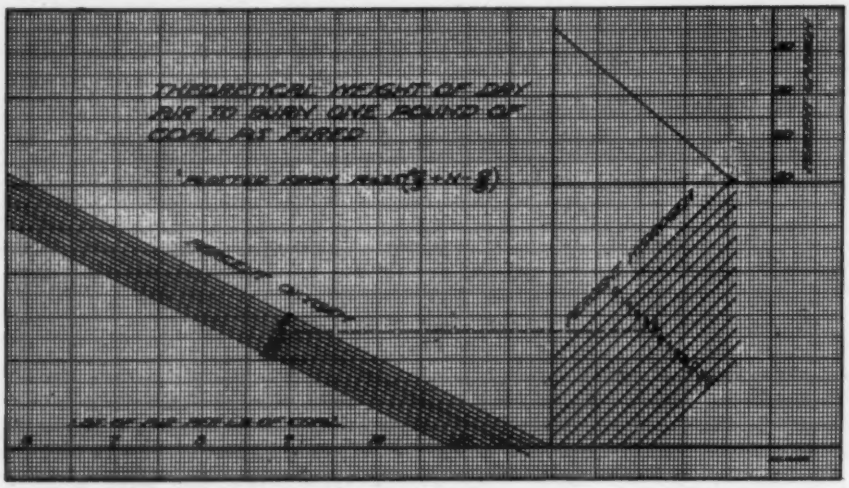


Figure 25

total air supplied to that theoretically required for various analysis of the flue gases.

To use this chart we must analyze the flue gases to get the per cent of oxygen then arriving at the per cent of nitrogen by difference. For instance, if the flue gas analysis shows 12 per cent carbondioxide (CO_2) and 8 per cent oxygen (02), then 12 plus 8=20; 100 minus 20=80 per cent nitrogen in this particular flue gas. Starting at the 8 per cent line at bottom of the chart, following vertically to the 80 per cent nitrogen curve, then horizontally to the per cent excess air scale, we find we have 64 per cent excess air and the ratio of air supplied to that theoretically required is 1.64 at the extreme left scale, which means we are supplying .64 pounds of air for every pound of coal burned more than is theoretically required.

The formula for figuring the air horsepower of a fan is:

H.P. = 0.000,158 QP
Q = Volume, cubic feet per minute
P = Pressure, inches of water.

Suppose we are supplying a furnace with 75,000 cubic feet of air per minute at a pressure of five inches of water, we multiply 75,000 by five and by .000,158, which gives us 59.25 air hp. Then if we increase the volume to 95,000 and the pressure to six inches, we increase the air horsepower to 90. Watch your fan speed, as the steam used to run fans needlessly cannot be used to help pull the mill.

The chart (Figure 25) by Mr. Klopp shows the theoretical weight of dry air to burn one pound of coal as fired. Starting at the per cent carbon in the upper right hand corner at 65 per cent, following the dotted line to the left transfer line, thence down to the 5 per cent hydrogen, moving horizontally to the left to the 7.5 per cent oxygen line then to the bottom scale reading nine pounds of air per pound of air as fired theoretically required.

According to Mr. V. J. Azbe, "the weight of air required for 10,000 B.t.u. varies with the available hydrogen in the fuel from 7.65 pounds for anthracite to 7.04 pounds for oil. In solid fuel, the maximum variation from 7.6 is less than 1 per cent.

"While the weight of air per pound of coal will vary greatly with its heat value, the weight of air per horsepower for 100 per cent efficiency will remain constant at 25.4 pounds and the weight of flue gases at 31 pounds. Dividing this by the efficiency we have the weight of gas per horsepower per hour developed."

Thus if the efficiency is 85 per cent, 31÷.85=36 pounds of gas per horsepower per hour.

Another way of arriving at the pounds of air per pound of coal is to divide the B.t.u. of the fuel by 1,300, to which we must add the per cent of excess air. Thus, suppose we are running at 13 per cent CO_2, we subtract 13 from 20.7 which is the per cent of oxygen in the air and divide by the per cent of CO_2.

$$\text{Per cent excess air} = \frac{20.7 - CO_2}{CO_2} \times 100$$

$$20.7 - 13 = 7.7$$

$7.7 \times 100 \div 13 = 59$ per cent excess air.

Assume we have 13,000 B.t.u. per pound of coal; this divided by 1,300 would equal 10, then 59 per cent of 10=5.9, and 5.9 plus 10=15.9 pounds of air per pound of coal actually used.

The constant 1,300 was found after making a number of tests with many different kinds of coal. If oil is used the constant should be 1,400.

This method of figuring the per cent of excess air leaves out possibilities that some of the oxygen of the entering air may have united with the hydrogen of the coal and could reduce the available oxygen to form CO_2, from 20.7 to 18 per cent, depending upon the amount of hydrogen in the coal. It takes two parts of hydrogen to one of oxygen to burn hydrogen, and the products of combustion will be water (H_2O when reduced to atmospheric temperature and pressure, while with carbon it takes two parts of oxygen to one of carbon, and the products of combustion will be Carbondioxide (CO_2).

Examination Questions

(1) Is natural draft a push or a pull?
(2) What is a fluid?
(3) What is the simplest way to measure draft,
(4) If you wished to increase the draft power of the stack how would you do it?

(5) Do clinkers on the furnace walls impair the draft?

(6) What two kinds of mechanical draft is usually employed in stationary boiler plants?

(7) State the difference between forced and induced draft.

(8) Does a stack have to be as high where induced draft is used, as where natural draft is used?

(9) Name the three definite relations regarding economy of fan operation.

(10) Which of the three relations mounts up the fastest?

Pulpwood and Wood Pulp

By M. W. HEDDEN

Racquette River Paper Company, Potsdam, N. Y.

THE PAPER INDUSTRY has for several years warned in no uncertain terms of the dangers of overexpansion. All acknowledged the wisdom of this advice but, apparently, each pulp and paper company considered it most desirable that some one else should do the curtailing. A few perhaps argued that the market would hold until they, personally, had cleaned up and he who followed could worry about overproduction.

Whatever the line of reasoning, it did not interfere with the building of new mills and enlarging the capacity of others. So extensive were these activities that trade magazines found it expedient to carry a department devoted to new projects and a page given over to construction and additional machinery installations by established firms.

Promoters referred to timber supplies as unlimited and the demand for paper was described as insatiable.

"After us the deluge" seemed to be the attitude of the newer organizations and the very large ones. In eastern states a number of concerns had learned from sad experience that timber is never unlimited and had been in competitive business long enough to know that no market is insatiable. They did not take part in the festivities, but as members of a family some of whose individuals have been on a protracted bender, all are disturbed by the effects.

Many mills have awakened, figuratively speaking, to find themselves in possession of a headache and a depleted purse, and, being the most human of all industries, they are trying to fasten the blame upon some one besides themselves. It has been demonstrated satisfactorily that corporations do have souls, and presently we shall probably find that they also have a sense of humor. This will give those responsible for present conditions courage to face the situation and find a remedy.

There are very few amusing things to be found in connection with our troubles just now, but one is an editorial written by a man who is financially interested in a pulp concern which did its share in the expansion carousal. He assumes that pulpwood and wood pulp are one and the same thing and says naively: "Western mills make wood pulp that is equally good or better than Russian" and calls upon the Government to ban Soviet shipments.

A concerted effort is being made to force the Treasury Department into prohibiting the importation of wood, this by people who do know the difference between the wood and the pulp. They reason that eastern mills now using this raw material should buy mechanical and chemical pulp from west coast mills, some of these being closed and others having a large surplus. This would undoubtedly help matters for the mills in question, but just listen to the eastern manufacturers!

They declare such procedure would be letting their own labor down. The men engaged in making pulp from Russian timber would be thrown out of work. Their employers claim this would mean a greater hardship than that experienced by the Pacific Coast unemployed, reasoning—rightly or wrongly, that their labor is more deeply rooted: that home ownership and wide family connections bind the Easterner to a given locality and changes are more troublesome to him than to laborers in newer sections of the country.

The eastern industrialist also claims that, owing to the depletion of timber, it is a patriotic duty to use the wood belonging to another country and conserve our own—if Russia, or any other country, wishes to sell its birthright, that is its ultimate cause for worry. Meantime, we should keep as much as possible of our own until such time as these countries determine to conserve their resources for their own benefit.

All that is lost to American labor by the use of imported wood is the preparation of the timber, they argue, and that subsequent operations in the wood mill, sulphite mill, bleach plant, etc., etc., make this one item negligible by comparison. They insist the purchase of pulp would be a great loss to themselves and particularly to their employees, even though it might benefit the West Coast, and in a small way, the country.

But since when have manufacturers been expected to take this altruistic attitude; they wish to be shown. During the recent tariff revision, Oregon and Washington demanded a high rate on shingles, which would help them but would be far from advantageous to the venerable roofs of the eastern seaboard. Utah believed that for its benefit the remainder of the United States should be glad to pay an advanced price for sugar. Massachusetts was consistently boosting for a low rate on raw hides and a high tariff for finished footgear. And Idaho thought any patriotic citizen should prefer freezing to wearing Australian wool.

The wails of protest continue. Paper mills are gratified concerning their own rate but object seriously to the protection afforded fourdrinier wire manufacturers, for one instance. Each individual feels that his particular problem is the most difficult. Sappho thought so, too, and more than 2,500 years ago wrotè these lines:

Mother, I cannot mind my wheel;
My fingers ache, my lips are dry;
O! If you felt the pain I feel!
But oh, who ever felt as I!

Which proves that human nature remains about the same. It is hard for any one of us to understand that the world cannot stop spinning out of respect to the boil on our personal neck.

Naturally, a distressed mill owner does not feel that overexpansion, or at least his particular part in the expansion, has anything to do with his troubles. They must be caused by the Wall Street crash, or the minority in the Senate, or Russian wood, or the drought in Abyssinia.

Over a long period the trade magazines announced in nearly every issue that various mills were adding large digesters to their equipment, frequently stating that additional paper machines were projected later but for the time being surplus sulphite would be sold. Subsequent events tend to show that in most cases no contracts had been negotiated to definitely take care of this new output. Overproduction troubles followed as surely as night follows the day.

For some manufacturers' reactions there is an ancient precedent. You recall that when Abraham took little Isaac up on a mountain to sacrifice him to our forefathers' blood-thirsty idea of God, he found a ram caught in the bushes and killed him instead—a lucky break for little Isaac but unquestionably hard on the goat.

Bible students, especially those who live in the eastern states, have discovered something of a parallel in our industry's problems. Some mills were confronted by the tragedy of killing off their overproduction when, to their intense satisfaction they discovered Russian wood. Of course, Abraham was not obliged to refer his procedure to a Congressional investigating committee. Isaac and the ram in that event would have spent a nervous interim, probably landing in a psychiatric ward instead of in the annals of sacred history.

Meantime certain mills are not proposing to curtail their production if any possible means can be found to compel a reluctant market to buy their surplus.

A similar case is that of the farmers. The Grange official organ in reporting the recent trip of Alexander Legge and the Secretary of Agriculture Hyde through the wheat belt advocating reduction of acreage, said: "It is probably true that never before in the history of the Government have high official spokesmen fared forth upon a more unpleasant and thankless mission."

Another writer states that although many farmers agree with the Federal Farm Board that acreage should be reduced, each is waiting for the other to do the reducing, figuring that for once in his life, he, personally would be sitting pretty.

It was a recognized fact long before the pyramids were built that supply and demand govern prices, and this law cannot be successfully abrogated by the best-intentioned officials. Unless new uses can quickly be found for pulp and paper products, the only alternative is to stop manufacturing a surplus. And the nature of man being what it is, this curtailment does not promise to be voluntary.

One can but marvel at the self-restraint shown by THE PAPER INDUSTRY—not once has it said, "I told you so!"

Steps in Use of the Slide Rule

An Infallible Principle for Locating the Elusive Decimal Point

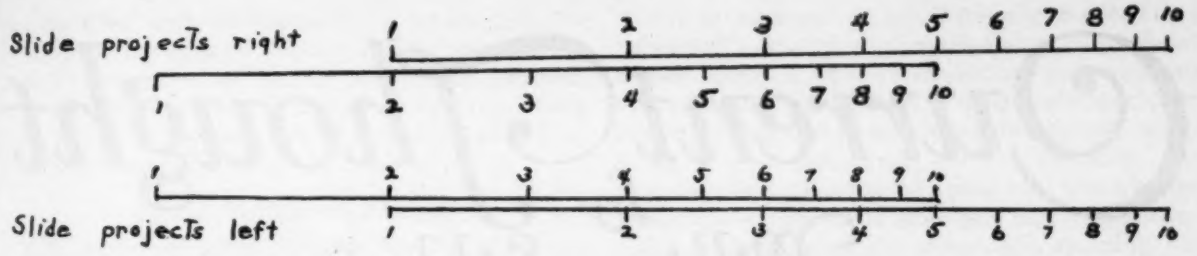
By PIERRE DREWSEN, Sandusky, Ohio

PERHAPS everyone has at least heard of slide rules and nearly all pulp and paper engineers are acquainted with their use. Few users of the device appear, however, to possess a sure-fire working knowledge backed by 100 per cent confidence in the results obtained. The following notes may be of some assistance in attaining this degree of assurance, and in securing the full benefit of one of the simplest and most ingenious of calculating devices.

The three steps to master in learning the use of the slide rule are:

1—Ability to read the rule
2—Multiplication and division
3—Location of the decimal point

The first two of these are simple and are explained in the instruction books which accompany the slide rule when purchased, but these instructions do not furnish an infallible principle for accurately locating the elusive decimal point.

When two ordinary numbers are multiplied together, the product, if decimal places are equalized, is either numerically greater or numerically less than either the multiplicand or the multiplier. For example, in the following multiplications, $3. \times 2. = 6.$, and $250. \times .0011 = .275$, if decimal places are equalized, the product is numerically greater; that is, 6. is greater than either 2. or 3., and 275. is greater than either 110. or 250. However, in $40. \times 30. = 1{,}200.$, and also in $.75 \times .45 = .3375$, the product is numerically less; that is, equalizing decimal places, both 40. and 30. are greater than 12., and both 75. and 45. are greater than 33.75.

With the single exception of multiplications similar to $10. \times 10. = 100.$, all products are either numerically greater or numerically less than any two numbers multiplied together to give such product—numerically greater or less being understood as explained above, after equalizing decimal places.

RULE I. In multiplication, if the product is numerically greater, it will have a number of digits to the left of the decimal point equal to the sum of the digits in the multiplicand and multiplier, **minus one.** For example:

Product numerically greater	$20. \times 30. = 600.$
Number of digits	$(2)+(2)-(1)=(3)$
Product numerically greater	$.0021 \times .000405 = .0000008505$
Number of digits	$(-2)+(-3)\ -(1)=(-6)$

It will be noted that zeros to the right of the decimal point count as minus digits.

It will also be noted that the above principle applies no matter whether the slide projects to the right or to the left. The sketch above shows both possible positions for the first of the above products.

RULE II. In multiplication, if the product is numerically less, it will have a number of digits to the left of the decimal point equal to the sum of the digits in the multiplicand and multiplier. Examples:

Product numerically less	$83. \times 65. = 5{,}395.$
Number of digits	$(2) + (2) = (4)$
Product numerically less	$.00793 \times .0000191 = .0000001515$
Number of digits	$(-2) + (-4) = (-6)$

Stating the above rules in very brief form:

Product "greater"—sum minus one

Product "less"—sum

makes them easy to remember; and by associating $2. \times 2. = 4.$ with the first, and $4. \times 4. = 16.$ with the second, these rules can be recalled to mind instantly.

In division, as for instance, when evaluating a fraction, the numerator is either numerically greater or less than the denominator, if decimal places are equalized. For example, in the division $16. \div 4 = 4.$, the numerator is numerically less than the denominator; in $.096 \div .0012 = 80.$, the numerator is numerically greater. The principle of locating the decimal point in division follows from that of multiplication and applies equally well whether the slide projects to the right or to the left.

RULE III. In division, if the numerator is numercially greater than the denominator, the quotient will have as many places to the left of the decimal point as the number of digits in the numerator less the number of digits in the denominator, **plus one.** Examples:

Numerator numerically greater	$1{,}728. \div 144 = 12.$
Number of digits	$(4) - (3) + (1) = (2)$
Numerator numerically greater	$625. \div .25 = 2{,}500.$
Number of digits	$(3) - (0) + (1) = (4)$

RULE IV. In division, if the numerator is numerically less than the denominator, the quotient will have as many places to the left of the decimal point as the number of digits in the numerator, less the number of digits in the denominator. Examples:

Numerator numerically less	$1{,}440. \div 60. = 24.$
Number of digits	$(4) - (2) = (2)$
Numerator numerically less	$.00330 \div 55{,}000. = .00000006$
Number of digits	$(-2) - (5) = (-7)$

Division rules may also be recalled to mind instantly by $16. \div 4. = 4.$ and $4. \div 2. = 2.$, and may readily be remembered as follows: Numerator greater—difference plus one.

Numerator less—difference.

It is obvious, of course, that this principle holds true regardless of whether the operation is performed long hand, on a slide rule or on a comptometer. This principle makes it possible to use rapid methods of multiplication and division, because the number of digits in the answer can, in division at least, be written down in advance.

"Rigorous Euclidean Proof" of the figuring principle is not essential. On the other hand, without constant practice, and use, slide rule proficiency is impossible. It is hoped that the above may be helpful to both active and prospective slide rule users.

The miracles of science are not confined to discoveries of new substances and new law and scientific phenomena; some of the greatest "miracles" of the future, as of the past, will be concerned with products and substances which have been in common use—or have been commonly considered useless—for centuries.—Business Chemistry.

Current Thought by William Sibley

Introspection

THE much talked-of and wished-for revival of commercial confidence and business activity is here at last. Governmental business barometers and private forecasters are unanimous in their predictions of better times—starting now. And while past experience has taught us to accept all such prophecies only with a flavoring of salt, it is plain to all who read that the low points in coal, lumber, cement and automobile production, steel plant operations, building contracts and general business confidence was reached last July and August.

This present day condition of commercial affairs is due, for the most part, to a revival of confidence. As I remarked in my article of August "Hard times are only fearful times. Times full of fear make times which are hard—for no reason other than the existence of fear." Much of yesterday's fear has been dispelled. By far the larger proportion of yesterday's fear has been replaced by confidence. And the result is what we see today: a swift return to increased business activity.

Another influential reason for the revival of business activity which has already started is the fact that, as Colonel Leonard P. Ayres says: "We have been manufacturing shortages."

Depressions, according to Colonel Ayres are of four phases: prosperity, decline, depression, and recovery. "When the country is prosperous the first seeds of depression are sown. Confidence spreads around, everybody is riding high, and everybody begins to produce as much as he can of everything, and as fast as he can in order to get as much of that prosperity as he can. He wants to get while the getting is good. One of the things the producer gets is a surplus. Next he gets a pain much like a little boy who tries to eat too much. He has business indigestion.

"The next phase is decline. Too much has been produced. A few factories suspend operations. Their suspended workers stop buying. People who are still working also find they have been spending too much and they stop buying, which in turn compels more factories to drop out.

"The next phase is the depression. This takes a good while to develop. At first men are busy telling the world that everything is all right. Then comes a kind of universal recognition that depression is here in earnest. Now arises the emotion of fear. Things were brighter-looking than they were. Now they are darker than they really are. The blue chorus gets into action, and that is the phase through which we have recently been passing. After this, as the movie titles say, came the dawn."

Taking the Colonel's analysis of depression and prosperity cycles we see that during the past several months—practically since the Wall Street stock crash—we have been manufacturing shortages. We have been akin to the camel and have been living off our hump of overproduction. We have been eating up our inventories—and to the extent where something must be done about it. That something is now starting in the form of increasingly large contracts, mounting unfilled orders, and enlarging payrolls.

Doubtless the improvement in trade and industry will be somewhat slower than like periods in the past because the public has learned the lesson of foolish optimism so recently that it will not forget to the point where it will plunge headlong too quickly. We have reached that higher mental level where good news is highly pleasing and bad news much less of a shock. Mr. Ford has issued the assurance that we are now headed for a greater and longer period of prosperity than has ever before been known, while several business charts indicate business curves reaching higher in 1932 than the peaks of 1929. Naturally, such forecasts are merely personal opinions, and regardless of the worthiness of their source, they are just that. However, I firmly believe the paper industry can look forward to a

decade filled with developments of far-reaching interest and importance. We are rapidly approaching a full resumption of healthy growth in aviation, transportation, radio, chemistry, refrigeration, heat and power production, and communication—all of which will mean much to our industry.

More Mergers Coming

The period of great mergers has by no means come to an end. Mergers involving tremendous sums of capital and incalculable influence are just around the corner in the radio world. Not only is this true amongst manufacturers and producers of radio equipment but also among the radio broadcasting stations. Far too many broadcasting stations are now being operated by brothers-in-law, failures, and men untrained in commercial pursuits. Radio broadcasting is a medium of advertising which is paying sponsors in spite of mismanagement and blind control, and having such value will not long remain in the hands of incapables.

More mergers may be expected in the chain store field, since the opposition to chain-store development will fail in the face of general economic welfare. Time was when the present day department store met with bitter opposition because it was sincerely believed they would drive the independent merchant out of existence. But the department stores continued and expanded—to the benefit of everyone, including the independent store. So it will be with chain stores in even more fields than they now occupy.

Almost entirely as a result of chain-store activity and expansion, independently owned retail establishments will become more alert and aggressive, more modern in their methods, more serviceable to the public. The chain-stores have a very definite place in American life and will survive and grow in spite of present day opposition. The future growth of chains may be at a somewhat slower pace than in the past, but the expansions which are coming during the next ten years will wipe out many inefficient independents and insecure jobbers, create better merchants out of the aggressive individual, and bring increased service where it did not exist before —to the benefit of everyone.

Largely through the foresightedness of chain-store operators, manufacturers have been encouraged to bring new and strange food-products to the American kitchen. One of America's largest food companies is now carefully preparing plans for the distribution of frozen foods. Having spent months in experimentation, executives of this concern are of the opinion that many types of meat such as filet of sole, haddock, bluepoint oysters, peas, spinach, cherries, logan berries, red raspberries, strawberries, orange juice, and countless other similarly perishable items, may be quick-frozen, then distributed profitably over the individual grocery counter.

The development of quick-freezing means, of a necessity, new types of refrigerator cars, motor trucks equipped with refrigeration, and countless thousands of waxed paper or fiber containers, fiber insulation chambers, and other necessities, many of which must come from our own industry. Not only does this development mean that the average housewife can go into a store and carry out a complete one-dollar meal for three—she selecting her meal from a menu which has little or no respect for the seasons—but it means new and extravagant uses for paper and paper products.

There are countless other influences which mean radical changes in the near future—for all of us. Flood-lighting will presently bring baseball, football, golf, horse-racing and other sports within the reach of the workingman who cannot leave his job during the day. There is a rapidly developing opposition to needless noise which will eventually force the substitution of quiet machines and methods for those which produce a din. Welding wire will doubtless replace the noisy hot-rivet; housings put to the gearing of street-cars and silencers to the mill machinery. Few of us will ever realize the value of silence, the ability to produce more and better because of silence, until we have gotten away from our present day noise.

Whole pages might be devoted to the development of amazing new devices which will mould our habits into entirely different form. Just a few of the devices in mind are: machine to transmit typed letters by wire; print entire phrases as rapidly as our typewriters now print individual words; instantly measure the intensity of ultra-violet rays; discharge or reload planes while in flight; provide a half-hour entertainment by radio for a dime; vending machines which say "Thank You" upon completion of the cash transaction; detect the presence of fog-hidden icebergs; stop a locomotive automatically when the engineer has failed to act promptly; make it possible for aviators, mill workers who must labor in deafening noise, or deaf persons to hear through the neck instead of the ear; etc., etc., etc.

Not long hence the people of the United States will have almost entirely forgotten the false prosperity and painful reaction of 1929, and will have settled to the task of producing necessities for constant consumption. We have a rich country and a vigorous people. We have 45,000,000 wage earners at work—guided by men who are constantly seeking to develop new markets, make new things, create new industries, devise new methods, automatize processes. By steadfastly holding to our policy of encouraging mechanical developments and scientific research, we will, before long, find that the rest of the world has also adopted that policy—with better standards of living and higher level of wages—for all.

Safety Congress Draws Thousands

Nineteenth Annual Meeting of the National Safety Council, with Its Paper and Pulp Section, Held at Pittsburgh, Pa.

THE spread of the safety movement in the industries of the country was brought home to the great industrial city of Pittsburgh, Pa., during the week of Sept. 29-Oct. 3, when the nineteenth annual Safety Congress and Exposition was held there, with 7,000 delegates in attendance. The city, through the local Safety Council, in conjunction with the municipal government and business houses staged an impressive "Safety Week," signs of which were visible everywhere. "Safety" slogans were displayed on banners in the streets and on residences, shops and schools, while the traffic policemen wore a sleeve attachment in the familiar green and white of the National Safety Council, bearing a safety legend. A portion of the street in front of the William Penn Hotel was closed to vehicular traffic, the sides of the roadway being given up to various exhibitions of safety devices.

A Noteworthy Exhibition

The exhibition features of this year's Safety Congress were of an extent and variety never previously attempted. In addition to the outdoor exhibition, two complete floors in the William Penn Hotel were devoted to the most elaborate display of equipment for the promotion of safety, health and efficiency ever shown. The United States Navy and the Bureau of Mines made especially interesting and educational exhibits. Tuesday, September 30, was Paper and Pulp Section Day and crowds of safety engineers and supervisors of mills thronged the booths during the afternoon to inspect the displays of first-aid and safety equipment. The exhibits included testing instruments and accident prevention equipment for nearly all industries represented in the National Safety Council, the total of exhibits numbering 142.

Congress Opened by President Pettibone

The general congress was opened early on Monday morning with an address by C. E. Pettibone, president of the council, and the reading of a message to the Safety Congress from President Hoover, who gave expression to his appreciation of the value of the work of the National Safety Council in efforts to prevent loss of human life due to preventable accidents in industry and elsewhere. President Hoover said in part:

Praise from President Hoover

"The death by accident of almost 100,000 persons in one year in the United States is a challenge to the resourcefulness of the nation to devise measures to eliminate this disastrous loss both of economic assets and of precious human values. Most of it is preventable and your educational campaigns to teach the methods of such prevention are worthy of all praise."

Facts About Accident Prevention

In his annual message President Pettibone summarized some of the facts about accident prevention. He said in part:

"This is a fitting time to ask ourselves if we are making progress. You can find people who will always say Yes, and you can find people who will say No. There have been increases in street and highway accidents. We do not know whether home accidents are being stopped in appreciable numbers. But we do know that in many directions there have been reductions and wonderful achievements by many railroads, industries, and communities and we can prove statistically great progress in specific divisions.

"All social progress is slow, but the significant fact about the accident prevention movement is that it is becoming better understood. The interpretation of it by many agencies is developing a deeper interest and stability, and the already known principles and technique need only be persistently and continuously expanded to have safety become an integral part of our every day living.

"Last year there was an 11 per cent decrease in deaths by accident among children in the school-age group. What a tribute to safety education, and what a convincing proof this is of the necessity for finding organizations in every community and those of national influence that can put over a program of education."

Headquarters of the Sections

Headquarters for the various sections of the National Safety Council, numbering about 50, were maintained at the William Penn Hotel and the Fort Pitt Hotel, but accommodations at these hotels were insufficient to house the vast army of delegates many of whom were housed in clubs and other hotels.

Proceedings of the Paper and Pulp Section

The Paper and Pulp Section had headquarters at the Fort Pitt Hotel and held its meetings there, beginning on Tuesday morning, September 30, at 9:30 o'clock, the chair was taken by Samuel Pruyn (Finch, Pruyn & Co., Inc.), general chairman of the section, with some 40 delegates in attendance. Mr. Pruyn said he had no set speech, but extended a hearty welcome and thought the section was to be congratulated on the excellent character of the work transacted during the year. There had been 15 or 20 additions to the membership, but losses had been incurred on account of the consolidation of mills. He complimented Walter F. Brennan on the excellent character of the News Letter which he had issued every month and suggested a vote of thanks to him, which was seconded by Former Chairman W. J. Peacock, and adopted unanimously. He then called for the regular order of business, which was Reports from Regional Directors, these being limited to two-minute presentations.

Report of Regional Director Record

In the absence of Alvin F. Record, regional director for the State of Maine, his report was read by H. G. Gilson, of the Oxford Paper Company, Rumford, Me., who is the new secretary of the Pulp and Paper Section, succeeding Nat. F. Bartlett, of Hollingsworth & Vose Company, Boston.

Mr. Record's report dealt chiefly with the accomplishments of the second State safety conference held on January 22, 1930, at Augusta, which was reported so fully at the time in THE PAPER INDUSTRY. This conference was attended by 125 persons representing 62 firms, and considering that the meeting was held in midwinter when roads were unsatisfactory for auto travel and attendance was exceptionally good. Mentioning that it was a one-day affair he gave the names of the contributors of papers and speechmakers.

As a result of this meeting and that of the year preceding, an important group of men, including large employers of labor and men of influence connected with business organizations have been interested. The State Labor Commissioner has been impressed favorably and reports a marked difference in his visits around the State, with safety growing rapidly.

Mr. Record also reported that a Legislative Committee had been appointed from the Governor's Safety Council to add to the Department of Labor a Safety Engineer to work among the various industries with a view of co-ordinating and supplementing efforts already being made and encouraging new ones. It was the intention of this committee, he

said, to work up a set of safety codes which will later be incorporated in the labor laws of the State.

The report stated that the general reaction throughout Maine regarding the extension of safety work was excellent. There was today a marked insistence on the part of those who have attended past conferences to have another this fall, preferably in November before auto travel becomes a problem.

Mr. Record thought the Pulp and Paper Section of the National Safety Council might well be proud of its part in these meetings. The co-operation of the council through Mr. Burns and Mr. Harvey had helped considerably to make them the success they were. In closing he said:

"It is my hope and expectation to see Safety come into its own in our State in the next few years. The hardest part is over. Interest is growing. All is serene on the Maine front."

James J. Hastings reported briefly for the State of Michigan, saying that it was yet an open field and he would like to see some action taken to develop enthusiasm there.

Fatalities from a Digester Explosion

James M. McGivney (Brown Company, Berlin, N. H.) reported for J. J. Tellington, regional director for New Hampshire. There had been a slight decrease of accidents in the State, according to a report of the Labor Department. The Brown Company, following a 50 per cent decrease last year, enjoyed a 25 per cent decrease up to August 12. On that date the company experienced the most serious accident since its foundation in 1868, when a vertical butt strap on the bottom of a digester gave way and caused the digester to explode, killing two men instantly and wounding eight others seriously. On the following morning a man who was repairing a steam pipe was severely burned and died from his injuries. This made three fatalities in one month.

Cause of the Explosion—Mr. McGivney mentioned that the explosion of the sulphite digester in the mills of the Brown Company bore a close resemblance to a digester explosion at the mills of the Laurentide Company, Grand'Mere, Quebec, in 1912. At the Berlin, N. H., mill one of the three vertical straps of the digester slipped, causing the plates to open out along the seams which was followed by a fearful explosion. A report on the explosion is now in preparation and will be supplied to the section. According to the report of a metallurgist, the butt strap was of poor quality. As a preventive of similar accidents in the future, Mr. McGivney said it was his understanding that two straps were to be used, one on the inside and one on the outside of the digester.

A Banner Regional Conference

W. F. Ashe, Thilmany Pulp and Paper Company, reported for the Fox River Valley regional conference, held at Green Bay, Wis., June 4, 1930, and gave credit to H. D. Banta, plant engineer of the Hoberg mills, for arranging one of the most successful State safety conferences that had ever been held, upwards of 300 delegates from mills in Wisconsin being registered as in attendance. One foreman had reported to him that he had never got so much of concrete value from any safety meeting as from the one held at Green Bay. Mr. Ashe expressed the hope that Mr. Banta's name would be presented for election as regional director, a hope which was fulfilled when the time came for the nomination of officers and directors, and he is now regional director for the Fox River Valley.

Regional Safety Conference Held at Powell River, B. C.

R. H. Scanlon, Powell River Company, reported as regional director for the Pacific Coast. He had organized a meeting at Powell River, British Columbia, which had been a very successful one. He reported 24 additions to the membership. This was the first report received of safety activities among paper mills on the Pacific Coast.

Nontoxic Character of Chrysoidin

J. J. Plzak, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., reported as chairman of the Committee on Health Research, saying that he had continued his studies of the effect of Chrysoidin upon workers in paper mills. He gave a lengthy account of research work that had been done to determine whether this substance, which is used to impart a peach tint to paper, was poisonous to the men who handled the dye. It was said to cause anemia and to stain the skin. It is excreted by the kidneys. As a result of the research referred to, it was reported that chrysoidin had no poisonous or other injurious action on human beings.

Advocates Regular Medical Examinations

Following this Mr. Plzak gave an account of the work accomplished by the Industrial Health Section of the National Safety Council, speaking particularly of Dr. C. O. Sappington's accomplishments. Mr. Plzak urged that mills call in a doctor two or three times a week for the medical examination of workmen, as it had been demonstrated that mills lose ten days due to sickness as compared with one day due to accidents. He advocated an extension of work in the industrial field and urged anyone present who was interested to write to Dr. C. O. Sappington, director, Industrial Health Division, National Safety Council, Chicago, for suggestions on carrying out this work.

The Movement for a Paid Secretary

Following the presentation of Mr. Plzak's report as chairman of the Committee on Health Research, came a special report by the committee which was appointed at the meeting in Chicago last year to make a canvass of the mills and work out some financial plan to provide the services of a paid secretary. The chairman of this committee was Walter J. Brennan, St. Croix Paper Company, Woodland, Me., and he had as associates Ernest Augustus, The Mead Corporation, and M. G. Hoyman, Kimberly-Clark Corporation. Mr. Brennan was called upon to present the report, which he did, prefacing it with an account of the steps leading to the formation of the committee. He said the committee had been appointed, on a motion of John Lundrigan, International Paper Company, to study the question of how to provide a paid full-time secretary for the section and funds sufficient to support the office. It was estimated that it would take $10,000 annually for salaries and office expenses.

American Paper and Pulp Association Asked to Assist

Mr. Brennan said that at the Chicago meeting it was deemed most feasible to assess companies interested on a "per man employed" basis, but that at a subsequent meeting in New York, it was decided that it would be best to obtain financial support from the American Paper and Pulp Association and kindred organizations. In view of this, plans were made to enlist the section, and particularly the regional directors, in a drive upon paper associations and managers with a view of creating a sentiment which would be helpful when the matter would come before the American Paper and Pulp Association.

The report acknowledged the indebtedness of the committee to W. Dean Keefer, chief engineer, National Safety Council, for having interviewed Jesse H. Neal, general manager. American Paper and Pulp Association, on the subject. Mr. Keefer spent two hours with Mr. Neal discussing with him the aims, needs and functions of the Safety Council. Mr. Neal was interested and agreed to discuss the matter with members of the executive board of his association.

Mr. Keefer suggested that contact be made, either by individuals or a committee, with the members of the executive board of the A.P. & P.A., and so make it easier for Mr. Neal to sell the idea to them. It was suggested that a few minutes spent with Mr. Neal when members were in New York would serve to keep the subject fresh in his mind.

Caution Against Hasty Action

The committee cautioned against any hasty action or presentation of the idea without first creating the requisite background of enthusiasm, the conclusion being that a general enthusiasm must be aroused throughout the paper trade for a full-time secretary and supported before the American Paper and Pulp Association by the most prominent men in the industry.

It was stated in the report that the fees paid by the Pulp

The Paper Industry Annual Safety Contest

Final Ranking of Paper and Pulp Mills, Members National Safety Council as of June 30, 1930

GROUP A

Final Rank	Member	Mill	Empl.	Hours Worked	L. T. Acc.	Days Lost	Rates Freq.	Rates Sev.	Points Cr.	Points Dr.
1	Kimberly-Clark Corp.	Badger-Globe	562	740,486	1	5	1.350	.007	571.600	
2	The Champion Coated Paper Co.	Paper Mill #2	609	991,995	2	65	2.016	.066	546.480	
3	Kimberly-Clark Corp.	Kimberly	832	1,095,569	3	114	2.738	.104	524.440	
4	Kimberly-Clark Corp.	Falls	634	1,032,399	4	125	3.874	.121	498.320	
5	Marinette & Menominee Paper Co.	Park & Vivtory	577	624,359	4	68	6.407	.109	450.060	
6	International Paper Co.	Fort Edward	626	683,232	3	236	4.391	.345	443.180	
7	Dill & Collins	Delaware	557	697,603	5	67	7.167	.096	437.460	
8	Nekoosa Edwards Paper Co.	Port Edwards	534	779,303	7	86	8.983	.110	398.360	
9	Canada Power & Paper Corp.	Laurentide	744	839,203	7	179	8.341	.210	391.180	
10	Kimberly-Clark Corp.	Niagara	531	716,379	6	156	8.375	.218	388.900	
11	Canadian International Paper Co.	Gatineau	880	1,396,804	14	174	10.023	.125	374.540	
12	The Champion Coated Paper Co.	Paper Mill #1	553	782,060	8	91	10.229	.116	372.220	
13	Container Corp. of America	Philadelphia	695	999,407	10	167	10.006	.167	366.480	
14	International Paper Co.	Hudson River	883	1,234,640	12	276	9.719	.224	360.820	
15	The Brown Paper Mill Co. Inc.	West Minroe	580	885,920	8	343	9.030	.387	342.000	
16	International Paper Co.	Niagara Falls	533	709,808	7	235	9.862	.331	336.560	
17	Marathon Paper Mills Co.	Menasha	526	791,465	11	170	13.898	.215	279.040	
18	Canada Power & Paper Corp.	Belgo	846	942,219	14	199	14.859	.211	260.620	
19	Fox River Paper Co.	Fox River & Telulah	511	648,278	10	205	15.425	.316	228.300	
20	Bird & Son, Inc.	East Walpole	663	770,110	4	1,045	5.194	1.357	224.720	
21	Mead Pulp & Paper Co.	Scioto	1,051	1,566,633	28	329	17.873	.210	200.540	
22	Spruce Falls Power & Paper Co. Ltd.		984	1,240,019	13	2,214	10.484	1.785	33.320	
23	Northern Paper Mills		654	863,137	23	256	26.647	.297		7.660
24	The Ohio Boxboard Co.		811	951,217	29	204	30.487	.214		52.540
25	Marathon Paper Mills Co.	Rothschild	581	797,589	22	423	27.583	.530		57.660
26	American Writing Paper Co. Inc.		1,780	1,739,369	51	1,443	29.321	.830		152.420
27	Price Brothers & Co. Ltd.		747	863,158	40	387	46.341	.448		416.420
28	Price Brothers & Co. Ltd.	Donnacona	530	759,963	32	1,235	42.107	1.625		567.140
29	Minnesota & Ontario Paper Co.		894	1,220,202	66	333	54.089	.683		618.380
30	Pacific Mills, Ltd.		1,255	1,661,062	96	588	57.794	.354		626.680
31	*Anglo-Canadian Paper & Pulp Mills									
32	*Fibreboard Products, Inc.	#1								
33	*International Paper Co.	Otis								
34	*Northwest Paper Co.	Northwest								
35	*Powell River Co. Ltd.									
36	*The Richardson Co.									
	Totals		22,213	29,023,588	540	11,915	18.606	.411	145.680	

GROUP B

1	The Crystal Tissue Co.		204	305,593	0	0	0	0	600.000	
2	St. Croix Paper Co.		436	561,628	1	20	1.781	.036	557.180	
3	Container Corp. of America	Ogden	473	468,643	1	5	2.134	.011	555.120	
4	Finch Pruyn & Co. Inc.		304	374,241	1	7	2.672	.019	542.760	
5	Nekoosa Edwards Paper Co.	Nekoosa	429	607,345	2	66	3.293	.109	512.340	
6	Dells Paper & Pulp Co.		443	587,660	4	119	6.807	.203	423.260	
7	Hoberg Paper & Fibre Co.	Hoborg Div. A	356	428,520	4	14	9.334	.033	406.720	
8	International Paper Co.	Piercefield	281	402,763	3	212	7.449	.526	345.820	
9	Cornell Wood Products Co.		319	491,450	5	172	10.174	.350	326.520	
10	Strathmore Paper Co.	Mittineague	409	460,254	6	77	13.036	.167	305.880	
11	The Falls Manufacturing Co.		271	352,720	4	135	11.340	.383	296.600	
12	Ontonagon Fibre Co.		218	278,075	5	18	17.981	.065	227.380	
13	International Paper Co.	DeGrasse	368	501,202	6	404	11.971	.806	199.380	
14	Rhinelander Paper Co.		401	529,410	7	382	13.222	.722	191.160	
15	Strathmore Paper Co.	Woronoco	302	367,401	8	38	21.775	.103	143.900	
16	Fort Frances Pulp & Paper Co. Ltd.		382	416,714	9	90	21.598	.216	124.840	
17	Container Corp. of America	Cincinnati	262	318,642	7	65	21.968	.204	119.840	
18	Hollingsworth & Vose Co.	West Groton	230	209,045	5	62	23.918	.297	62.240	
19	The Albemarle Paper Mfg. Co.		338	401,240	10	101	24.923	.252	51.140	
20	Mead Fibre Co.	Kingsport	443	663,492	8	1,056	12.057	1.592	40.460	
21	Alton Box Board & Paper Co.	Federal	215	304,801	8	220	26.247	.722		69.340
22	Rising Paper Co.		252	285,067	8	155	28.064	.544		70.080
23	Thilmany Pulp & Paper Co.	Paper Mill	382	417,932	13	196	31.106	.469		116.920
24	Kenora Paper Mills, Ltd.		371	425,479	14	254	32.904	.597		177.480
25	Kimberly-Clark Corp.	Lakeview	224	290,537	12	259	41.303	.891		404.260
26	Bemis Brothers Bag Co.	Peoria	261	333,891	16	126	47.920	.377		433.800
27	Hoberg Paper & Fibre Co.	Fibre Div. B	238	300,389	15	151	49.935	.503		499.300
28	Hollingsworth & Vose Co.	East Walpole	285	349,420	18	204	51.514	.584		547.080
29	Escanaba Paper Co.		221	349,632	20	306	57.203	.875		719.060
30	Great Lakes Paper Co. Ltd.		251	583,399	28	1,431	47.995	2.453		850.500
31	Container Corp. of America	Coated Board	247	297,102	20	189	67.317	.636		873.540
32	*Chemical Paper Co.									
33	*Chicago Mill & Lumber Corp.									
34	*Crocker McElwain Co.									
35	*Fibreboard Products, Inc.	Mill #2								
36	*Fibreboard Products, Inc.	Mill #3								
37	*Great Western Paper Corp.									
38	*Hummel Ross Fibre Corp.									
39	*International Paper Co.	Berlin, N. H.								
40	*Masonite Corp.									
41	*Price Bros. & Co.	Riverbend								
	Totals		9,816	12,663,627	268	6,534	21.163	.516	73.540	

GROUP C

1	Port Huron Sulphite & Paper Co.	Sulphite #1	157	217,310	0	0	0	0	600.000	
2	International Paper Co.	Webster	117	153,321	0	0	0	0	600.000	
3	Bird & Son, Inc.	Phillipsdale	138	249,053	0	0	0	0	600.000	
4	Marinette & Menominee Paper Co.	Menominee	118	145,311	0	0	0	0	600.000	
5	The Upson Co.		99	121,266	0	0	0	0	600.000	
6	International Paper Co.	Livermore	85	118,740	0	0	0	0	600.000	
7	United States Gypsum Co.	No. Kansas City	42	72,136	0	0	0	0	600.000	
8	International Paper Co.	Riley	50	64,378	0	0	0	0	600.000	
9	United States Gypsum Co.	Gypsum	34	53,495	0	0	0	0	600.000	
10	Continental Paper & Bag Corp.	Greenwich	30	36,279	0	0	0	0	600.000	
11	Sorg-Oglesby-Smith Paper Co.	Oglesby	128	173,617	1	13	5.760	.075	469.800	
12	Canadian International Paper Co.	Fibre Board Mill	106	183,182	1	22	5.459	.120	466.820	
13	The Adams Bag Co.		153	203,526	2	15	9.827	.074	388.660	
14	Monroe Paper Products Co.		133	189,782	3	51	15.808	.269	230.040	
15	Price Brothers & Co. Ltd.	Jonquiere	178	204,347	3	78	14.681	.382	229.980	
16	Port Huron Sulphite & Paper Co.	Paper #2	126	162,807	3	8	18.427	.049	221.660	
17	Wardlow-Thomas Paper Co.		72	110,548	2	14	18.092	.127	212.760	
18	Lowe Paper Co.		137	195,871	4	64	20.422	.327	126.160	
19	Defiance Paper Co.	Mill #1	120	169,238	4	52	23.635	.307	65.900	
20	The Franklin Board & Paper Co.		98	143,243	3	101	20.943	.705	40.140	
21	Bergstrom Paper Co.		165	190,163	6	32	31.552	.168		64.640
22	Reid-West Box Co.	Circleville	147	214,053	7	30	32.702	.140		82.040
23	Sorg-Oglesby-Smith Paper Co.	Sorg	149	222,192	6	217	27.004	.977		135.480
24	United States Gypsum Co.	Oakfield	54	79,351	3	69	37.807	.870		330.140
25	The Gardner & Harvey Co.	Mill #1	145	240,708	10	172	41.544	.715		373.880
26	Defiance Paper Co.	Mill #3	37	45,289	2	21	44.161	.464		376.020
27	Continental Paper & Bag Corp.	Ashland	87	117,305	6	36	51.149	.307		484.380
28	The Gardner & Harvey Co.	Mill #3	55	87,166	4	74	45.889	.849		487.580
29	Thilmany Pulp & Paper Co.	Wis. Tissue	84	101,352	4	181	39.466	1.786		546.520
30	Continental Paper Co.		206	281,328	6	1,073	21.327	3.814		589.340

The Paper Industry Annual Safety Contest

Final Ranking of Paper and Pulp Mills, Members National Safety Council as of June 30, 1930

GROUP C—Continued

Final Rank	Member	Mill	Empl.	Hours Worked	L. T. Acc.	Days Lost	Rates		Points	
							Freq.	Sev.	Cr.	Dr.
31	Sorg-Ogiesby-Smith Paper Co.	Smith	44	70,993	4	32	56.344	.451		617.080
32	Thilmany Pulp & Paper Co.	Sulphate	193	236,208	13	147	55.036	.622		625.120
33	The Northwest Paper Co.	Frederick	134	171,589	12	127	69.812	.739		944.040
34	Biandin Paper Co.		146	222,523	18	127	80.891	.571		1132.020
35	The Gardner & Harvey Co.	Mill #2	88	152,816	12	393	78.526	2.572		1484.920
36	New York & Pennsylvania Co. Inc.	Champlain	133	173,551	22	98	126.764	.565		2048.280
37	Marathon Paper Mills Co.	Ashland	136	182,197	17	808	93.306	4.435		2153.120
38	*Bedford Pulp & Paper Co. Inc.									
39	*The Beveridge Paper Co.									
40	*Hagar Straw Board & Paper Co.									
41	*International Paper Co.	Winnipiseogee								
42	*Lawrence Paper Mfg. Co.	Container Board								
43	*Mid-West Box Co.	Kokomo								
44	*Union Bag & Paper Corp.	Fenimore								
45	*Union Bag & Paper Corp.	Allen								
46	*Union Bag & Paper Corp.	#8								
47	*United States Gypsum Co.	Lancaster								
	Totals		4,124	5,656,334	178	4,055	31.469	.717		172.780

*Complete returns not received.

GRAND TOTAL AND AVERAGES

Total Mills		Employees	Hours Worked	Acc.	Days Lost	Freq.	Sev.	Points Credit	Points Debit
36	Group A-Over 500 Employees	22,213	29,023,588	540	11,915	18.606	.411	145.680	
41	Group B-201 to 500 Employees	9,816	12,663,627	268	6,534	21.163	.516	73.540	
47	Group C-20 to 200 Employees	4,124	5,656,334	178	4,055	31.469	.717		172.780
124		36,153	47,343,549	986	22,504	20.826	.475	88.480	

and Paper Section to the National Safety Council from 208 sources amounted to $11,000 annually, and it was intimated that the council should be asked for specific monetary assistance. It was thought that trade publication might be disposed to contribute in view of the returns they would receive in news matter.

Discussion of the Report

Chairman Pruyn remarked that the Paper and Pulp Section of the National Safety Council had a membership of 233, representing 180 or 190 paper mills, and he hoped that everybody would get behind the effort to provide a paid secretary and push it to a successful conclusion. He then called upon Mr. Lundrigan to discuss the subject.

Mr. Lundrigan said that the principal thing in the minds of the older members was the getting of results. With a full-time secretary it would be possible to prepare an attractive program for the meeting and interest the mills. Increase of membership was a secondary consideration. If the right line of work was undertaken the section would have a paid secretary by the end of the year.

F. H. Rosebush was of the opinion that it would be necessary to demonstrate to the American Paper and Pulp Association how they were to be benefited by the employment of a paid secretary by the Paper and Pulp Section of the National Safety Council.

W. A. Gleason, Hammermill Paper Company, Erie, Pa., put forth the idea that instead of continuing the Committee on Full-Time Secretary, the officers of the section should approach the National Safety Council and ask what they proposed to do in the matter, tell the Council that we pay dues and ask what is given in return. Furthermore, inquire if the Council would be willing to reduce the dues and allow the section to hire a secretary if they were not willing to provide one.

Mr. Rosebush declared that he personally was unable to see how the National Safety Council could either put up money to finance a secretary, or reduce the dues. He did not believe that the National Safety Council made any money on the Paper and Pulp Section. If the section could show the executives of paper mills that it could render them a profitable service there would be no difficulty in securing funds.

Rise and Development of Compensation Laws

Fordyce P. Stanley, vice-president, Glens Falls Indemnity Company, Glens Falls, N. Y., was invited to the platform and made a long and eloquent address, in the course of which he reviewed the rise and development of indemnity and compensation laws. He said he had been familiar with the safety movement for fifteen years and had seen its good results.

Mr. Stanley said that at the start nobody took any stock in safety work. If the men were foolish enough to injure themselves it was their own lookout. Viewed from his own angle, that of an indemnity insurance worker, he was convinced that by striking at the coffers of a company more interest would be taken in safety work, though in the beginning employers did not feel that it was any of their business to look out for accidents. He traced the changes in attitude of employers and employees' organizations since the advent of mechanical devices that caused accidents and sent human derelicts out on the streets.

The First Employers' Liability Act

The workers organized to bring about legislation putting employer liability acts on the statute books, said Mr. Stanley, and he asked if anyone present could say in what state the first employers' liability law was enacted, declaring they would be surprised to learn that it was the State of Alabama, a section of the country which at that time was not distinguished for the extent of its manufactures.

Origin of Compensation Acts

Organized labor then brought in Compensation Acts, the idea being borrowed from European countries. The first compensation act to stand the test was enacted in the State of New Jersey. An earlier act passed in New York was declared unconstitutional in the higher court; it was proved unconstitutional, because it took away a man's rights without due process of law.

Urges Taking Safety to the Home

Mr. Stanley said 97 per cent of all accidents in the United States today occur in the home, and safety engineers will not have carried the work to its finality until it is taken to the home and to the children in the home. Think, he said, of the work you would save if you took the child and made him familiar with safety principles! He advocated putting on a campaign in the public schools by means of pictures and lectures.

He spoke of the skilled mechanic at his industrial job surrounded by safety devices and safeguards of all kinds. When that man leaves the mill or factory to start for home in his automobile, where was the greater hazard? So he counselled men to instruct their boys how to operate safely their automobiles, saying the lessons would bear fruit when they were older. The ultimate results of safety work would

be greater if a start was made in the home and proceed from there to the factory. In closing, he left the thought with his audience that "An accident prevented is a benefaction; a clear compensation an apology."

Medical and Nursing Service in a Paper Mill

The last paper at the morning session on Tuesday was one entitled "Medical and Nursing Service in a Paper Mill," by Dr. Louis H. Frechtling, director, Department of Industrial Relations, The Champion Coated Paper Company, Hamilton, Ohio.

Medical and Nursing Service

Doctor Frechtling put the question, "Why have medical and nursing service in a paper mill?" and answered it by saying that through such an agency emergencies in which a worker may be injured, or a group threatened with contagious or infectious disease, are more promptly met. In such emergencies some physician from the community is called in to take care of the situation, and after the emergency has been attended to his services cease until some new occasion arises.

Doctor Frechtling intimated that it was not sufficient for a service of this kind to cover only the existing needs. Industry demands something more, he said. He demands a healthful and mentally normal working force. The employee is justified in demanding a healthful, sanitary working place, uncontaminated by disease and fellow employees who, through physical defects cannot carry on the work.

Doctor Frechtling observed that it was easier to organize a medical and nursing service in a large mill than in a small one. The time was not far distant, he said, when every industry would have some form of medical service. He then discussed the qualifications of the director of such a service. He or she must be a physician of broad training, and must be more than a good surgeon which is thought by many to be the chief requirement. Surgery consists of no more than one-third of the work, and a physician-director must also be an internist, a diagnostician, an expert on sanitation, as well as an all-around medical utility man.

After enumerating some of the qualifications of a director of medical and nursing service, Doctor Frechtling touched upon the physical equipment of a medical department. The amount of space required would depend on the activities engaged in and the number of employees served. The department should be located as centrally as possible, so that employees from all departments could be able to come and go with least loss of time. He then discussed details of a proper medical and nursing service. The care of accidental injuries was stated to be the primary function of all industrial-medical departments. He said:

"An accident occurring, we are immediately faced with a number of problems. First, How can we aid recovery in the quickest possible time? Secondly, How can we prevent the recurrence of the same or similar accidents? Thirdly, How can we prevent any permanent liability to the injured employee? And lastly, How can we avoid a fatality occurring in the injured employee's case?"

Emphasis was placed on the care of minor injuries. Permitting slight scratches, pin pricks, to go untreated might result in serious infections entailing great suffering and a loss of time and money.

Opposition was expressed to putting first-aid outfits at different locations throughout the plant, such a procedure being declared to be one full of danger. If such outfits are used, it should be insisted upon that the employee present himself or herself as early as possible to someone who is competent to judge whether the treatment used is sufficient. Often a treatment to a wound from a first-aid outfit gives a false sense of security to the employee and later results in serious infections. It was advised that no first-aid outfit be available for the promiscuous use of employes, but should always be under competent supervision.

In regard to physical examination of candidates for employment, it was noted that such examination took care of the interests of all parties concerned, new employees, old employees and employers.

Doctor Frechtling said that applicants for positions were rejected in the majority of plants having an entrance examination, for one or other of the following reasons:

1—Applicants having one eye, or who have less than half vision in each eye.

2—All cases of infectious or contagious diseases such as tuberculosis, scabies, trachoma and venereal infections.

3—All cases of hernia in which the same cannot be held in place with a proper fitting truss.

4—All cases in which there is a heart disease which has gone beyond the point where the heart can no longer carry on its work properly.

5—All cases in which the blood pressure is excessive.

6—All cases in which there is exaggerated varicose veins or ulcers.

He made the recommendation that every employee should be submitted to an examination annually to ascertain the state of his or her health or for the discovery of diseased conditions.

As to nursing service, the day has passed when "the nice motherly woman" served as a plant nurse. Today the industrial nurse is a well equipped and experienced individual. She assists in all work and medical examinations and gives special treatment under the direction of the physician. In some mills the nurse is used as a visiting nurse—that is, she calls upon the employees at their homes either at their request or the request of the management.

Discussion of Doctor Frechtling's Paper

In reference to a statement by Doctor Frechtling in regard to the loss of one eye as a total disabiliy and also in regard to high-blood pressure as a disability, Chairman Pruyn asked if there was no place for a one-eyed man in any department of a paper mill.

Doctor Frechtling answered that if a man with one eye loses the sight of the other one, there is a complete loss of vision and the mill would be penalized accordingly.

Chairman Pruyn made inquiry concerning the proper temperature of drinking water in boiler room and machine room and was told that a temperature of 60 or 65 degrees would be agreeable.

Ultra-Violet Rays in First-Aid Work

In reply to an inquiry by W. J. Peacock regarding the use of the ultra-violet ray in the mills with which Doctor Frechtling is connected, the doctor gave some interesting particulars of the production and use of ultra-violet rays. The light from an electric arc passed through fused quartz becomes ultra-violet rays he said. These rays are used in many indications and in different forms of lamps. Thus he spoke of the Alpine lamp, an air-cooled lamp made by the Hanovia Company, and the Krohmyer lamp, a water-cooled lamp, used over certain areas for disinfection or sterilization. Various kinds of quartz are inserted in the handles and with them one can abort a boil or disinfect a tissue that has been opened. Alpine lamps are used for toning the system, as they increase the calcium in the blood stream and build up resistance.

Doctor Stanley said that these agencies were just a part of physiotherapy which had a place in every industrial plant. He described the ultra-violet rays as chemical rays and the infra-red rays as physical rays.

Ultra-Violet Rays in Treatment of Burns

J. N. McGivney asked if ultra-violet rays were used in the treatment of burns from scalding steam. In the Brown Company plant, excellent results had been obtained on one occasion by using ultra-violet rays in a severe case of burns of this kind.

Doctor Frechtling said that ultra-violet rays had been found useful in the treatment of x-ray burns.

Questions of Regular Medical Examinations

There followed an interesting discussion on the question of conducting regular medical examinations of employees after it had been found that there was nothing wrong with them, the question being put by F. H. Rosebush, who said employees were suspicious that the employer was trying to

find out something to their detriment through regular examinations of this kind.

It was explained by Doctor Frechtling that reexaminations were required only in the case of substandard men.

A New G. E. Cream

The treatment of dermatitis and of burns from caustic soda was the subject of an inquiry by one of the delegates.

Mr. Brennan said that ultra-violet rays had been used in his mill, but that he intended when another case presented itself, using a cream that had been developed in the laboratory of the General Electric Company, which was said to have remarkable properties and was known as G. E. Cream.

After several announcements by the chair in regard to events on the following day, the report of the Committee on Nominations was called for.

Officers Nominated

The report of the Nominating Committee was read by K. L. Faist, as follows:

General Chairman—W. J. Brennan, St. Croix Paper Company, Woodland, Me.

Secretary—H. G. Gilson, Oxford Paper Company, Rumford, Me.

Vice Chairmen of Sections

Canada (No nominations; open).

South, G. W. Phillips, The Champion Fibre Company, Canton, N. C.

Extreme South—W. H. Jennings, Bogalusa Paper Company, Inc., Bogalusa, La.

Middle West—M. G. Hoyman, Kimberly-Clark Paper Company, Neenah, Wis.

East—W. A. Gleason, Hammermill Paper Company, Erie, Pa.

Vice Chairman of Paper Box Manufacturers—Arthur Murray, Container Corporation of America, Chicago, Ill.

Walter J. Brennan
Chairman, Paper and Pulp Section, National Safety Council

News Letter Writers—W. J. Brennan, J. M. McGivney, B. D. Rogers, Samuel Pruyn, W. A. Gleason, Earl Grant. (Each named is to have charge of the News Letter for two months in succession during the year.)

Chairman of Health Research Committee—Louis H. Frechting, M.D.

Chairman of Contest Committee—A. Scott Dowd, THE PAPER INDUSTRY, Chicago, Ill.

Chairman, Engineering Committee—J. J. Plzak, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.

Regional Directors

Maine—Arthur Winslow, Hollingsworth & Whitney Company, Waterville, Me.

Massachusetts—Ben D. Rogers, Bird & Son, East Walpole, Mass.

Michigan—James J. Hastings, safety director, Port Huron Sulphite and Paper Company, Port Huron, Mich.

Minnesota—Arthur N. Wold, Minnesota & Ontario Paper Company, Minneapolis, Minn.

New Hampshire—James M. McGivney, Brown Company, Berlin, N. H.

New York—R. G. McConnell, Defiance Paper Company, Niagara Falls, N. Y.

Pennsylvania—Emilie I. Raub, Dill & Collins Company, Philadelphia.

Ohio—E. E. Grant, The Crystal Tissue Company, Middletown, Ohio.

Wisconsin Valley—F. H. Rosebush, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

Fox River Valley—H. D. Banta, Hoberg Paper & Fiber Company, Green Bay, Wis.

Pacific Coast—R. H. Scanlon, Powell River Company, Ltd., Powell River, B. C., Canada.

The report was signed by the full committee, consisting of of W. J. Peacock, chairman; G. W. Phillips, Kenneth L. Faist.

On motion regularly made and seconded, the report of the committee was accepted, and it was then ordered that the secretary cast one ballot for the election of the officers, regional directors, news letter writers and committee chairman named in the report.

Second Session, Wednesday

Tuesday was Paper and Pulp Section Day at the Safety Exposition in the William Penn Hotel and most of the delegates found their way there in the afternoon, following the election of officers at the forenoon meeting in the Fort Pitt Hotel.

Wednesday's proceedings started with a luncheon in one of the large dining rooms on the main floor of the Fort Pitt Hotel, shortly after the noon hour. Following the luncheon came a feature of the meeting which always attracts the greatest attention, the announcement of awards in THE PAPER INDUSTRY annual safety contest. The Paper and Pulp Mill Section had been honored by having as its guest at luncheon the president-elect of the National Safety Council, who made the award of the National Safety Council trophies to winners in groups A, B and C, while A. Scott Dowd, on behalf of E. B. Fritz, who was unable to be present, presented the grand prize or THE PAPER INDUSTRY Trophy to that one of the winning mills which had established the best over-all record.

The new president of the National Safety Council is Carl W. Bergquist, Superintendent of Public Relations for the Western Electric Company at Chicago, who had for a year previously been vice-president of the National Safety Council in charge of finance, and his presence at the luncheon meeting of the Paper and Pulp Section to make the presentation of the Council prizes to successful contestants was greatly appreciated by the officers and members of the section.

Walter J. Brennan, general chairman of the section, presided and at the close of the repast announced that the moment had arrived to which all looked forward, when the results of the safety contests among member mills would be disclosed and prizes awarded. Before proceeding to this he said he would read a letter from E. B. Fritz, publisher of THE PAPER INDUSTRY, and donor of the major award, by which it would be known that Mr. Fritz to the regret of all present had been prevented from attending this year's meeting and had delegated the presentation of the award to the editor, Mr. Dowd. Mr. Brennan then read the letter, which is in part as follows:

Letter from E. B. Fritz

"To the members of the Paper and Pulp Section of the National Safety Council, Greetings: . . . . . "The subject of Safety is one of the most important to manufacturing plants such as paper or pulp mills. There are so many possible chances for accidents, which mean the loss of life or limb, or at least the loss of time or suffering by men and their families. If we believe in the Golden Rule, we certainly must be interested in the subject of Safety, and every man in every mill should do everything possible, within his power, to help his brother man to keep from being injured, and causing suffering to himself and others.

"This is the human side of Safety and it pays tremendous dividends to every manufacturing plant. The other side is the financial side of the question, which while important, is secondary to the human side; but particularly in such times as we have been experiencing it is possible for a mill, where

every man has in mind the question of Safety for himself and his fellow man, to have their costs considerably reduced as compared with a mill where this question may not seem of so much importance.

"We, of THE PAPER INDUSTRY, believe in safety in the mills. We are getting real enjoyment from watching the score and noting that each year many mills show a record of fewer accidents than in former years. We are indeed getting more fun out of it than most of the members or men who devote their time to safety and each year we look forward to seeing a reduced record of accidents and suffering, as well as loss of money.

"We get more real pleasure out of presenting this trophy than any mill could get from receiving it, for we believe in its presentation, and that with efforts of the mills to secure it, there is a lessening of accidents, and this is the one thing we desire most.

"It is our hope that this section may grow and thrive until every mill in this country is listed as a member, and until all mills have come through the year without recording accidents or suffering to any of its employees, or loss to its company."

The reading of this letter was received with loud and long continued applause.

Praise for "The Paper Industry"

Chairman Brennan then announced the next item on the agenda, the presentation of a paper entitled Data on the Contest, by A. Scott Dowd, chairman of the Contest Committee, remarking that the section probably did not realize how much attention and service THE PAPER INDUSTRY magazine gave to the interest of the section, and said a number of other complimentary things concerning the management of the publication, to which Mr. Dowd responded with grateful acknowledgment, taking occasion at the same time to call attention to the presence at the meeting of the associate editor from New York, who was asked to stand up and be introduced to those of the section to whom he might not be known. Mr. Dowd then delivered his prepared address, as follows:

Data on the Contest

It has been said that 95 per cent of the things we hear are forgotten; 70 per cent of the things we read pass from our memories, but less than 5 per cent of the things we actually do are ever forgotten.

This leads us to believe that the growing success of the safety movement in our pulp and paper industry is due to the fact that the members of this Paper and Pulp Section of the National Safety Council are striving year after year through manual and mental efforts in their respective mills to lower their accident records by trying to improve upon their past experiences.

The annual contests between mill members of this section during the past five periods have unmistakably provided means and inspiration for making honest and intense efforts to reduce accidents. There is little doubt either but that the influence spread by these 120 active participants in our annual contests has reached into all paper and pulp mills throughout the land to the end that Safety is now recognized as a most desirable and important spoke in the wheel of our business structure.

Before touching particularly on the records of the mills which have been engaged in the 1930 contest, let us consider a few facts concerning the accident experience during 1929 of all members of the Paper and Pulp Section. Those of you who have read the National Safety Council's publication, "Industrial Accident Statistics," 1930 edition, have noticed that the paper industry has again improved its accident record during the year 1929.

Lost time accidents in the Paper and Pulp Section, represented by the experience of 111 plants that have reported to the Council in each of the last three years, were 24.07 per million hours worked in 1929, compared with 24.73 in 1928, and 30.27 in 1927. The severity rate also has declined and was 21 per cent less than in 1928, and 11 per cent less than in 1927. This is a record of which we can be proud, for our improvement in safety was outstanding in comparison with the experience of industry as a whole, shown in the following:

Decrease in Serious Accidents—The records of about 1,100 plants in all industries reporting in each year from 1927 to 1929 show a reduction in the frequency rate of 11 per cent; our plants represented by the 111 establishments, have achieved a drop of 20 per cent during the same period. The severity rate for industry as a whole has increased from 1.92 to 2.02, but in our Section, severity has been reduced from 1.99 to 1.78 or 11 per cent. The experience of industry as a whole also shows that the fatality rate increased in 1928 over 1927, and that the rate for permanent partial disabilities increased during 1929 over 1928. But through your efforts, our industry has been able to show lower rates for serious accidents during 1929 than for any previous period.

The interest which the members of this section are taking in their accident problems is shown by the increase in the number of reporting establishments for 1929, in comparison with previous years—a gain of 29 per cent over the year 1928.

The frequency rate for all plants in the Paper and Pulp Section reporting for 1929 was 28.43 and the severity rate was 1.77. This compares with an average frequency rate of 25.53 for all industries represented in the Council's statistical publication. We, therefore, had about three more accidents per million hours worked in our industry than is indicated for industry as a whole. On the other hand, our severity rate of 1.77 is 21 per cent less than the average severity of 2.23 for all industries. Among the 27 industries listed in "Industrial Accident Statistics," 1930 edition, we rank seventeenth, on the basis of frequency. In other words, accidents in our industry are somewhat more numerous than in most. These comparisons emphasize the need for continuing our safety efforts which have successfully brought reductions in the past.

Incidence of Accidents in Different Divisions—Let us know examine the accident situation in various branches of our own industry. Paper box and container manufacturing plants had an average frequency rate during 1929 of 37.76; paper goods establishments a rate of only 14.71, and paper and pulp mills, a rate of 29.42. I have already said that the average rate for the entire industry was 28.43 for the 215 reporting plants. Hazards, of course, in these different divisions of our industry vary, but 26 per cent of all reporting plants had frequency rates less than 14.99, or almost half the average rate for the entire industry. Plants from every division of our industry are represented in a group of 14 with frequency rates less than 5.0. These plants, ranging in size from 25 to over 1,000 employees, have demonstrated real achievement in safety. They have set a mark for the rest of the industry to shoot at, whether engaged in making paper boxes, envelopes and stationery, or newsprint.

Outstanding Facts—Referring now to the fifth annual Safety Contest of mill members of the Paper and Pulp Section, let us consider some of the outstanding facts in connection with this. Mimeographed copies of the final ranking of all contestants as of June 30, 1930, are in your hands. There were 124 mills registered in 1930, compared with 123 the year before; 122 in 1928 and 119 mills in 1927. A number of the mills failed to send in their monthly reports and they were consequently withdrawn from the Contest in compliance with the rules, leaving a net number of 98 mills in the combined three groups that finished the contest.

The total number of persons and man hours worked in the 1930 Contest averaged 1,310 hours per person, compared with 1,348 in each of the two previous annual contests, and 1,296 in the year 1927.

Steady Decrease of Accidents—There has been a steady decrease in the number of accidents in contesting mills in the past four years; also in the amount of lost time. Frequency rates of the contesting mills by years are as follows:

1927 — 33.514
1928 — 28.422 = 37.9% decrease
1929 — 26.337 = 26.7% decrease
1930 — 20.826 = 20.9% decrease

The severity rates by years are as follows:

1927 — .649
1928 — .553 = 26.8% decrease
1929 — .504 = 14.1% decrease
1930 — .475 = 5.8% decrease

It is noteworthy that frequency and severity rates made by those competing in the contest were lower than those summarized from the reports of all pulp and paper mills in the section. In the year 1929, this comparison shows:

	Frequency	Severity
All mills (full year, 1929)	29.42	2.89
Mills in 1929 Contest (6 months)	26.337	.504

This is an indication of the fact that it pays to create and intensify interest in the prevention of accidents.

The number of mills in the 1930 Contest that had frequency and severity rates below average was less than in any previous year, but in 1930, there were 11 mills that completed the contest without a lost time accident as compared with six mills in 1929, eight mills in 1928 and six mills in 1927. We are making excellent progress but it is also evident that there is still plenty of room for improvement.

Contests Are Inspiring and Stimulating—There is now substantial proof in the records to show that these contests in the Paper and Pulp Section are a great inspiration and stimulant for the reduction of accidents. At the last Congress, it was suggested that the terms of these contests should be extended from six months to one year, beginning with July and ending on June 30 of the following year. I, therefore, present this to you again at this time for your consideration and discussion, and in connection with same recommend that we hold one more six month's contest end-

Representatives of Paper and Pulp Mill winners of prizes in 1930 Safety Contest

Inset, C. W. Bergquist, President of the National Safety Council. Bottom row, left to right—James J. Hastings, Port Huron Sulphite and Paper Company, Port Huron, Mich.; Charles H. Pippert, Shartle Bros. Machine Company, Middletown, Ohio, who received the Group A and major trophies awarded to the Crystal Tissue Company, Middletown, Ohio; Miss Signa Evansen, Kimberly-Clark Corporation, Neenah, Wis.; Walter J. Brennan, St. Croix Paper Company, Woodland, Me. Upper row, left to right—M. G. Hoyman, Kimberly-Clark Corporation, Neenah, Wis.; Fred Van Liew, Kimberly-Clark Corporation, Neenah, Wis.; Kenneth L. Faist, Champion Coated Paper Company, Hamilton, Ohio; John Lundrigan, International Paper Company, New York; Howard H. Aderhold, Kimberly-Clark Corporation, Neenah, Wis.; R. W. Graffam, Bird & Son, Pittsburgh

ing June 30 of next year in order that trophies can be awarded at the 1931 Congress; understanding therewith that immediately following the close of this next contest, the 1932 Contest will begin on July 1 for a period of 12 months.

THE PAPER INDUSTRY magazine is grateful for the privilege it enjoys of taking an active interest in the affairs of this Paper and Pulp Section. The friendships that have been established, the splendid co-operation it receives from the National Safety Council and the members of this section, and the thrill and satisfaction it receives in the realization of progressive accomplishment born of a good idea, combine in making our association with you a great pleasure.

President Bergquist Distributes Council Prizes

C. W. Bergquist, president-elect of the National Safety Council was then introduced by Chairman Brennan to make the presentation of awards of National Safety Council trophies to the winning mills in the A, B and C groups.

Before giving the names of the prize winners, Mr. Bergquist mentioned how much he had been impressed with the apparent interdependence of many of the industries represented in the National Safety Council and, speaking of his own industry, he remarked that all present might not know that paper is used in the construction of telephones—the thousands of miles of telephone wires would not be possible without paper, of which the Western Electric Company buys millions of pounds from paper manufacturers. He expressed his appreciation of the opportunity to be present at the award of prizes, consisting of the National Safety Council trophies or plaques to the winning mills in the contest, explaining that the A group represented mills of 500 and more employees; the B group, 200 to 500 employees and C group 20 to 200 inclusive employees.

A Significant Paragraph—He quoted what he considered to be a significant paragraph in the statement of facts concerning the progress of the safety contest from January 1 to June 30, 1930, which was that in 1930, the average severity rate was .475, which represented a 5.8 per cent decrease over the 1929 rate of .504 and a 14.1 per cent decrease over the 1928 rate of .553 and a 26.8 per cent decrease over the 1927 rate of .649.

Kimberly-Clark Corporation Winner in Class A

He then proceeded to announce the awards, Fred Van Liew, being asked to come forward to receive the trophy for the best record in Group A mills which was awarded to the Kimberly-Clark Corporation. Mr. Van Liew, in turn, introduced Miss Signa Evansen and Howard Aderhold, of the Badgor-Globe mill to receive the award.

Crystal Tissue Mills Carries off Prize in Group B

Among Group B mills the Crystal Tissue Company, Middletown, Ohio, ranked highest with a clear record of no lost time and a credit of 600 points. In the absence of Earl E. Grant, the regular delegate who had been called home on account of a death in the family, the trophy was accepted for the Crystal Tissue Company by Charles H. Pippert, of Shartle Brothers Machinery Company, Middletown.

Port Huron Sulphite Winner in Group C

In Group C, the Port Huron Sulphite and Paper Company (sulphite mill) had a final ranking of No. 1, with a perfect score of no accidents during the period of the contest and was awarded the third trophy, which was accepted by their representative, James J. Hastings.

Award of Certificates of Merit

Next came the award of certificates of merit to mills that had made records entitling them to the award. In Group A the Champion Coated Paper Company ranked No. 2 and the Kimberly mill of the Kimberly-Clark Corporation No. 3, each receiving certificates accordingly.

The St. Croix Paper Company, Woodland, Me., carried off the certificate of merit for standing No. 2 in Group B, and the Container Corporation of America, Ogden Mill, Chicago, was also awarded a certificate of merit for final ranking in Group B.

Certificates of Merit for perfect scores of no accidents during the period of contest were awarded to the following mills in Group C:

International Paper Company, Webster Mill, Orono, Me.
International Paper Company, Livermore Falls, Me.
International Paper Company, Riley, Me.
Bird & Son, Inc., Phillipsdale, R. I.
Marinette & Menominee Paper Company, Menominee, Mich.
The Upson Company, Lockport, N. Y.
United States Gypsum Company, North Kansas City, Mo.
United States Gypsum Company, Gypsum, Ohio.
Continental Paper & Bag Mills Corporation, Greenwich, N. Y.

Following brief talks by Mr. Lundrigan and by R. G. McConnell, who made the suggestion that if any of the delegates were in Niagara Falls at any time it would pay them to take a trip to the mill of The Upson Company at Lockport, a few miles away, and see a stop system, such as is used in traffic regulation, for calling attention to deviations in machine operation that called for correction.

Chairman Brennan then announced that the climax of the awards had been reached, the presentation of the THE PAPER INDUSTRY grand prize, an award which was usually made by E. B. Fritz. He said that the winning of this trophy stamped the successful contestant as the safest mill for the period of contest. In the absence of Mr. Fritz, the award would be made, he said, by A. Scott Dowd, editor of THE PAPER INDUSTRY.

Award of Major Trophy

Mr. Dowd gave a detailed explanation of the award of the major trophy, saying:

"Rule 12 of the Contest reads "When the winner of each group has been definitely decided, the judges will award by a majority vote to the one of these three, having in their opinion, established the best record based on frequency and severity, man-hours worked, physical conditions and any other contributing factor, the grand prize donated by THE PAPER INDUSTRY of Chicago." There are five judges of this contest whose names are listed in Rule 15.

"In order to give these judges an idea of physical conditions in the mills that won their respective group trophies, each of the latter was invited to present a story about its own individual safety work. Letters were accordingly received from the Kimberly-Clark Corporation, whose Badger-Globe mill won the Group A trophy with a record of one accident involving five days' lost time; The Crystal Tissue Company, which won the Group B trophy with a perfect score of no accidents, and the Port Huron Sulphite & Paper Co., whose pulp mill also made a perfect score and won the Group C trophy.

"Each of these letters exhibited splendidly organized systems for maintaining interest in Safety. The character of the hazards is quite different in each—one having a number of tissue papermaking machines and a converting plant; another having a larger number of papermaking machines, and the other having the hazards incident to a wood room and a sulphite pulp plant.

"These conditions were studied by the judges and their decisions were in due time forwarded to the National Safety Council. George Burns, secretary of the Contest Committee, has authorized me to announce that the mill which has received the majority of the votes cast and is thereby declared the winner of the major trophy of the 1930 Contest, is the Crystal Tissue Company, Middletown, Ohio.

"I, therefore, call upon the representative of the Crystal Tissue Company to step forward and receive the trophy awarded by THE PAPER INDUSTRY for the best no-accident record among 124 mill members of the National Safety Council during the period of January 1 to June 30, 1930.

Addressing Mr. Pippert, who represented the Crystal Tissue Co. in the absence of Earl E. Grant, Mr. Dowd said:

"I will ask you to convey this message and trophy to the Crystal Tissue Company, with the congratulations of THE PAPER INDUSTRY for its splendid achievement. We hope it will be an inspiration for this mill to carry on with continued success the crusade against accidents."

The absence of Mr. Fritz, "Dad" Fritz, as he is affectionately known to the majority of delegates, was made the subject of comment by several members, and with a view of expressing the sense of loss felt by his absence, on motion of former secretary Nat. L. Bartlett, the chairman was authorized to send a telegram voicing the feeling of the delegates as one of regret at the loss of his presence at the meeting. At the same time it was resolved to send a message to Earl Grant, Personnel Director of the Crystal Tissue Company, conveying the sympathy of the section in the bereavement which compelled his return to Middletown before the prizes in the safety contest had been distributed.

Following announcements by the chair, which included among others, a notice to all officers of divisions to remain after the meeting to discuss the question of a paid full-time secretary, the regular program was taken up, and a paper entitled "Achieving Built-In Safety," by W. J. Brennan, safety director St. Croix Paper Company, Woodland, Me., was presented.

Psychological Angles to Safety Work

By "built-in" safety, Mr. Brennan contemplated a condition of safety consciousness on the part of individuals, or groups of men, whereby every act has a thought of the hazards involved—a sort of automatic brain function.

After premising that safety is a mental habit, Mr. Brennan went on to say that like psychology the scope of safety involves human thoughts and actions, and because no outstanding results will ever be had by the safety director who neglects this angle of his work, we must necessarily be practical psychologists. Men must be "sold" on safety and if not touched by its humanitarian aspects they must be made to realize its economic features. He suggested a few approaches to the attainment of that psychological ideal which he termed "built-in" safety. First came the bulletin board. He evidently has no use for the ordinary type of warning posters. "To the weary fellow coming off tour and occupied with thoughts of troubles at home, our beautifully printed and illustrated commercial posters look about the same; that is, a poster reading 'Safety pays,' or 'Safety is your best friend' will not register through the brain fag."

The best way to reach the unreceptive individual is to supply "punch" to the boards. He accordingly advocated the use of sheets of newsprint 17 inches x 23 inches in size, "splashing on brief messages packed with a wallop." The time to placard the plant with powerful posters is immediately at the time following an accident. It is then that the men's minds are particularly receptive and responsive, said he. "As the metropolitan newspapers rush their special editions to the streets so should we rush our warnings, teachings and safety news to the boards at critical moments."

Tactful Handling of Men Counselled—Mr. Brennan accompanied this with suggestions for pictures and poster appeals giving some apt illustrations of effective appeals to the men. He advocated the creation of a sentiment among men that the executives really want safety, believe in it and practice what they preach. The exercise of judgment in reprimanding men for safety errors for unsafe tactics was counselled. The mill program is not benefited when a safety man breaks into a crew to scold an unsafe worker, holding him as a bad example before his mates. If you are to be "ripped up the back," you expect it to be done in private. The same applies to the man in the crew, said Mr. Brennan, who doubted if safety is ever again sold to a heart that nurses a grudge against safety and you. "Hunted up later in the day, the offender can be given to understand the reason for the delay, and talked to in a friendly but firm way."

Mr. Brennan is no believer in playing off one department of the mill against another. On the contrary, he considers

Trophies Awarded to Winners in the 1930 Safety Contest

Major trophy awarded by THE PAPER INDUSTRY

Group trophies awarded by National Safety Council. Left to Right—Group A, Group B, Group C

this one of the surest ways to get into difficulties. No two departments have the same degree of hazards, same number of employees, or men of identical mental equipment. Contests conducted in such a way as to require correction factors are futile in that the majority of competitors are neither able nor willing to resort to mental gymnastics in order to ascertain their standing.

Departmental Pride Should Be Encouraged—It was altogether quite another thing to develop departmental pride. He said this could be encouraged by a faithful posting of special signs bearing the number of consecutive days without accident. He himself had found a standardized blue-printed poster of exceptional value. Some men cannot be made to understand or take an interest in the national contests and have but a lukewarm interest in bonus contests. Men of this type are often found to center their pride and enthusiasm in the departmental record, and special displays should be made for them.

A systematic method of inculcating the practice of safety among new employees was set forth by Mr. Brennan. No one needed a double dose of safety psychology so much as the new employee, he said, and continued:

"Coming to us with no idea of the intensity of our accident prevention program, it often happens that disaster results before the new employee gets the idea. The psychological moment in the new man's case is when hired. He is given to understand by the Employment Supervisor that he must be a safe worker, that he is on trial, and that a complete safety service record is kept. Promotion depends upon this record equally with ability and ambition. Being anxious for work and grateful for a job, the new employee's mind is very receptive to any safety requirements the Employment Supervisor may impose. Immediately following employment, the man should be sent to the Safety Director for a detailed instruction in rules, contest and first-aid requirements."

At this point Mr. Brennan gave credit to F. L. Irvin, supervisor of employment at the plant of the St. Croix Paper Company, for his "psychological sessions" with newcomers.

In bringing the paper to a close, Mr. Brennan said that in the last analysis accident prevention would be preeminently successful only when the men in overalls want it so. "Owners, executives and safety directors can provide money and direction, but the vital spark must be supplied by the men." . . . "However, successful any of us may be, none can dispute the fact that guards, good-housekeeping and supervision are but accessories to that fundamental prevention factor, safety consciousness. Accidents originate in the brains of men. When the same brains turn to the prevention you have built-in safety."

Discussion of Mr. Brennan's Paper

Mr. Brennan's paper was well received and he was cheered at the close. Discussion was invited, Mr. McConnell, of the Defiance Paper Company, leading off with a query regarding the way in which enthusiasm for safety precautions was developed. He asked particularly if Mr. Brennan had found foremen to be enthusiastic. Mr. Brennan gave it as his opinion that the foreman was "not so hot" and that it was best to go straight to the men. Nat. Bartlett narrated an experience of his with a worker who had asked him to endorse his final naturalization papers on the strength of some words of praise which Mr. Bartlett had given on his safety work, the story being told to emphasize the value of direct relations with the men.

W. F. Ashe spoke in praise of Mr. Brennan's paper saying it was one of the most valuable contributions to the subject he had ever listened to, though in reference to a remark by Mr. Brennan that safety engineering would be better styled human engineering, he dissented from this, saying that human engineering was an art distinct from safety engineering.

Foremen Held Responsible in Canada—E. Douglass Walker, of the Quebec Manufacturers' Service Agency, Montreal, gave it as his opinion that the foreman should be held responsible. In Montreal mills, the best results were obtained by getting the management to go after the foreman. Mr. Brennan did not agree with him and insisted that it was a safety engineer's duty to deal directly with the men.

F. H. Rosebush wanted to know why as much is not expected from foremen in safety work as in production and he stressed the importance of a clean plant which influenced good production and efficient safety methods.

Fundamentals in I. P. Mills—John Lundrigan remarked that in the mills of the I. P. Company certain fundamentals were observed. Foremen must not only be well informed on their particular job, but also be good plant housekeepers, seeing to it that cleanliness and order were maintained. They should be told the way safety work must be carried out and supervisors in turn be charged with responsibility for any oversights. Some foremen are "hardboiled" and retain the notion in the back of their heads that this whole safety movement is something conjured up to provide soft jobs. Safety engineering consisted of education and engineering and in his mills they usually coupled Employment and Safety in one man, who may have authority to transfer the worker from one position to another.

Mr. Lundrigan believed Mr. Brennan's ideas on the subject to be absolutely sound. The effort in his mills was to keep a direct line of contact between the chief executive and the safety engineer, to make the safety engineer the eyes and ears of the executive. It was a mistake to emphasize any gain to the management in the prevention of accidents, but better to stress the point that accident frequency is a controllable evil.

Mr. Rosebush asked permission to clarify his previous statement. He said he regarded foreman training as a part of safety training.

Prefers Dirt and Morale to Cleanliness Without Morale—H. G. Gilson asked Mr: Brennan to explain his statement of belief that it was possible for a mill without guards and perfect cleanliness to operate without accidents. He had visited Mr. Brennan's mill and found it in perfect condition with a board stripped of posters. Mr. Gilson said that if he had his choice of two conditions he would select the one where there was a mill with good morale and dirt, rather than a clean mill with no morale.

As to stripping the bulletin board of posters, Mr. Brennan said that when June 30 comes around the men heave a sigh of relief at the thought of a new set of posters being used to start the next contest.

M. G. Hoyman said that the managers of mills were brought to their safety meetings and that in the case of his mills they got as much safety co-operation from the managers as was instilled into them.

Mr. Brennan qualified his previous statement concerning the foremen, who, he said, were in charge before systematic safety methods were started. He admitted that the foreman had his place in the safety scheme and without his co-operation difficulties would arise.

Charles H. Pippert was asked to give his impressions. He said that the Crystal Tissue Company had engaged in systematic safety work only since the first of the year, but from that time there had been a 50 per cent decrease in accidents.

As the hour was growing late, Chairman Brennan suggested that the discussion of the safety code for paper and pulp mills which had been scheduled for the afternoon meeting should be postponed till Thursday morning, in order to permit C. F. Otto, safety engineer Employers' Mutual Liability Insurance Company, Wausau, Wis., to present his paper.

Selling Safety to Employees

Mr. Otto showed a series of safety posters calling attention to the necessity of certain observances and interspersed his running story with jokes and anecdotes. One of the stories he told bore upon the right kind of ambition for a man to possess. Sir Christopher Wren, the architect of St. Paul's Cathedral, London, took it upon himself one day to find out what his workmen thought of their work. Walking over to the edifice under construction, he asked the first workman he met what he was doing. "Breaking stones," was the answer. The same query to the next man brought the answer, "Working for two shillings and six pence a day,"

and the third man approached said, "I'm helping Sir Christopher Wren to build this cathedral."

Mr. Otto held the interested attention of his audience from first to last. He closed by the recital of verses of a simple appealing character bearing on the home and the trials of women and children when faced with the deprivation of loved ones by accident.

Before adjourning the afternoon session Chairman Brennan urged the members to provide more questions for the last sitting on Thursday morning.

CLOSING SESSION, THURSDAY

The program for the meeting on Thursday morning, October 2, in the Rose Room of the Fort Pitt Hotel provided for an informal breakfast meeting at 8 o'clock, but through some misunderstanding of the hotel management, the breakfast table was not provided and many of the delegates wandered away in search of food elsewhere. Some eight men gathered around the breakfast table when it was set up and engaged in a general discussion of the full-time secretary question, those participating including W. J. Peacock, F. H. Rosebush, Kenneth L. Faist, L. P. Sirois, Charles H. Pippert, Walter J. Brennan, A. Scott Dowd and T. J. Keenan.

Revision of the Safety Code

The business meeting which opened at 9:30 a. m. was attended by 40 delegates. W. F. Ashe, employment manager of the Thilmany Pulp and Paper Company, Kaukauna, Wis., who was to have presided at this meeting was unexpectedly called away and his place was taken temporarily by Mr. Brennan, who afterwards allowed Mr. Rosebush to conduct the proceedings, as the one having the greatest familiarity with the Safety Code for paper and pulp mills, of which R. M. Altman, chairman of the Code Committee, was the father.

There was a long discussion on the proposed revision of the Safety Code. The thought was generally expressed that care should be taken in the writing in of any new matter, Mr. Lundrigan suggesting to hold over the work of revision for a year and in the meantime invite members to supply comments.

Revise by Publication

Mr. Peacock thought it would be a good plan to revise the code in parts by publication through THE PAPER INDUSTRY. Some of the members declared that they did not see the necessity of revising the code, Mr. Lundrigan asking what there was to object to in it. Speaking for the New York members, he reminded those present that any rule that was adopted would be accepted by the New York State Labor Commission as the minimum requirement, so it behooved them to be careful about amendments.

There was some discussion about publishing a revision of the code as a supplement, and Mr. Rosebush said he liked this as well, as he thought of having the code printed and revised section by section in THE PAPER INDUSTRY, but a motion by John Lundrigan finally prevailed that a committee be appointed, to include R. M. Altman, to co-operate with the National Safety Council, THE PAPER INDUSTRY magazine and governmental departments to secure revision and publication of a revised safety code for paper and pulp mills. Appointed on this committee were J. J. Plzak, Arthur Murray, R. M. Altman and A. Scott Dowd, editor of THE PAPER INDUSTRY.

A Homily on Safety

This business concluded, and before discussing the 1931 contest rules, Walter A. Darling, a blind man, was introduced to give a lecture on safety, which was well received. He made a little preachment or homily on enthusiasm, courage and constancy and gave utterance to a number of pithy sayings, as—perfect records are worth having and worth work; men who make records never make excuses; constancy is the acid test that proves the worth; a quitter never wins and a winner never quits.

Discussion of Contest Rules for 1931

The business of the meeting was then resumed and Chairman Brennan called upon Mr. Dowd to lead the discussion of 1931 contest rules. The chief subject of discussion was on the question of allowing other manufacturers than pulp and paper to participate in the annual contest. He read a letter bearing on this from the Fibre Container Branch of the Mengel Company, Louisville, Ky.

Mr. Dowd thought that hazards of different natures were quite common to all branches of industry, but had a feeling that hazards in converting plants are not the same. In reply to a question he said that the membership of the section consisted of 27 paper box or container firms; 40 paper goods manufacturers and 148 paper and pulp manufacturers, making 215 members in all.

Arthur Murray said that so far as box manufacturing plants were concerned he saw no reason why they should not enter the contest, but it was different with converting establishments.

Proposed New Group of Contestants

R. G. McConnell, Defiance Paper Company, remarked that his concern was identified with the Niagara Wall Paper Company, who are interested in the annual paper mill safety contest, and if another group or special class of contestants was established it might prove a means of interesting wall paper plants of which there are some 35 or 40 in the United States.

Mr. Dowd said it was not so much the question of expense for prize trophies as the increased clerical work which would be made necessary.

Mr. Pippert asked if there was any intention on the part of the section of interesting paper machinery and paper mill equipment manufacturers in the safety movement. He thought some provision should be made for these firms which bear so close a relation to the industry.

There ensued a lengthy discussion on the question of creating another class of contestants for safety prizes to be known as Group D which would permit contests between them. It was suggested that one prize might be offered for competition by the mill group and another for converters, certificates being awarded to the others.

Ernest Augustus questioned the real value of the prize idea. He wondered whether the section was accomplishing all it aimed at by giving a grand prize and thought it might be best to set a standard or line of accomplishment to which all mills might strive, every mill reaching the goal to be awarded a certificate, no matter whether there were 20 or 30 mills reaching the highest grade.

Director Cameron Confers with the Section

W. H. Cameron, managing director of the National Safety Council, entered the room at this point, and Mr. Peacock reviewed for him the earlier discussion relating to the prize contest and the establishment of a new group. Mr. Peacock brought forward the suggestion that certificates be issued to every mill that exceeded its previous record of safety.

Mr. Cameron said it was a new idea to give every mill contesting for a prize a certificate when they surpassed their past performance, and the question of expense would play no part in it. In the Steam Railroad Section a certificate is awarded that shows the rating of the railroad and this is something that is highly valued by the members.

In regard to the question of a paid secretary, he admitted that the section should be provided with one, preferably a pulp and paper expert who could visit the mills regularly and arrange for meetings. The difficulty was to find the money.

Refund of Dues Suggested

Chairman Brennan recalled for the benefit of Mr. Cameron that at last year's meeting in Chicago, a committee was formed to consider ways and means of providing a paid full-time secretary, and he put the question to Mr. Cameron if there was any way in which some part of the dues paid by the section to the National Safety Council, amounting to $11,000, could not be refunded to the section to defray part of the expenses of hiring a secretary. It would be helpful to any committee approaching the American Paper and Pulp Association for funds if the share of the National Safety Council could be stated.

Mr. Cameron gave it as his opinion that the best way to approach the American Paper and Pulp Association would be through its directors. The difficulty with trade organizations was that they were organized for commercial purposes. A good way would be for some of the delegates to go to the presidents of their companies and get them interested in the subject. Perhaps there were men of means in the industry who would be glad to underwrite the project if the matter was brought properly to their attention.

What Other Sections Are Doing

The only section in the National Council that now employs a paid secretary is the Petroleum Section, though the Accident Prevention Manufacturers' Section is arranging to employ a paid secretary this year. The funds necessary were raised by the holding of an exhibition of standard safety equipment on Penn Way, an outdoor exhibition which attracted a great deal of attention. Each exhibitor was charged a certain amount for the privilege of exhibiting and a sum of $5,000 was realized in this way.

Mr. Dowd mentioned that there had been some discussion that morning of concentrating all the activities of the section in a one day meeting to which the executives of mills would be invited, and he expressed the hope that Mr. Cameron could be prevailed upon to attend this meeting in order to meet the mill executives and discuss matters with them.

Before leaving, Mr. Cameron assured the section that he would be pleased at all times to receive suggestions from them for transmission to the Council.

New Contest Group Planned

The regular business of the meeting was then taken up at the suggestion of the chair and Mr. Hoyman suggested that two men be named with Mr. Dowd to handle the matter of forming a new group for the prize contest. Mr. Dowd suggested making the committee a local one and Chairman Brennan thereupon named the committee to consist of A. Scott Dowd, chairman; Arthur Murray and George E. Burns, associates.

Certificates on a Graded Basis

The question of arranging for a meeting of paper and pulp mill executives was then brought up and after some discussion it was decided to continue the Committee on Contest, with instructions to co-operate with the Program Committee, and on motion of Mr. Peacock it was recommended that the Rules Committee of 1931 Contest study and put into effect a method of awarding mills who surpass the average of the entire contest.

F. H. Rosebush proposed it as a motion that the suggestions made by Mr. Augustus and Mr. Cameron for a graded basis of award of certificates of merit such as is employed by the Railroad Section, be effected for the Paper and Pulp Section in 1932, this to apply to all participants in the safety contest. This motion was adopted.

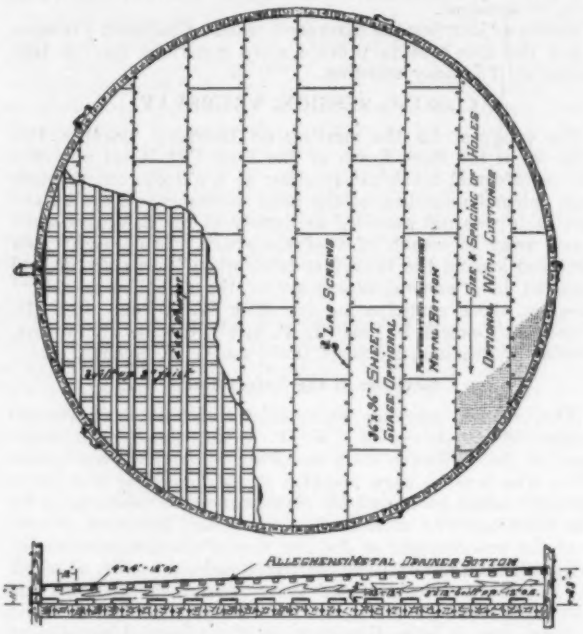
The remainder of the forenoon sitting was to have been given over to a discussion of practical questions bearing on safety and accident prevention but as the hour for luncheon had approached it was decided to hold another meeting in the afternoon. The afternoon meeting was not well attended and action was taken to provide for a discussion of queries and answers pertaining to safety methods in the monthly news letter. This practically concluded the business of the Paper and Pulp Section and the members dispersed to their homes after voting the Pittsburgh meeting one of the most interesting and valuable as to results of the entire series.

L. B. Mead, for two years Indianapolis manager for the Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., has been made assistant manager of the Industrial Sales Division with headquarters in Chicago. Wm. J. Morgan, who has been associated with the Indianapolis office succeeds Mr. Mead as manager.

Link-Belt Company, Indianapolis, Ind., announces that Warren Maxwell, formerly assistant superintendent, has been appointed superintendent, to succeed the late F. J. Oakes.

Allegheny Metal Blow Pit Bottom

One of the comparatively recent developments in the construction of a blow pit is the use of Allegheny Metal for the false or drainer bottom. In line with this development the Kalamazoo Tank & Silo Co., of Kalamazoo, Mich., has



announced that they are in position to supply the trade with such bottoms complete with supporting timbers of longleaf yellow pine or with the drainer bottoms only.

The sheets, cut to size to fit any blow pit, are perforated with 3/32-inch round holes spaced on ½-inch or 1-inch centers as required. These sheets are securely fastened by means of lag screws to the wood joists which support them. Advantages claimed for this bottom include acid resistance insuring long life, no plugging and uniform draining with a bottom which remains bright and smooth.

Additional information will be furnished by the manufacturer upon request.

New Swedish Pulp Company to Organize Central Testing and Research Laboratory

The Swedish Pulp Company, the large combine in the Swedish pulp industry, will shortly organize a central testing and research laboratory at Svartvik, for all its sixteen mills.

Among the chief objects of this new institution will be the establishment of a centralized technical quality control of the whole production with a view to supporting the individual mills in their efforts to produce a pulp of highest possible quality. Further it will become a center for all their investigational and experimental work in the pulp field.

The management of the Swedish Pulp Company hopes that this important complement to the mills will greatly facilitate the foundation and development of a closer technical relation with their numerous customers all over the world, whom they are desirous of rendering every possible service.

Gösta A. Hall has been appointed manager of the new laboratory.

The following mills belong to the Swedish pulp combine: Bergvik Björknäs, Essvik, Franö, Kramfors, Lulea, Matfors, Munksund, Nyhamn, Obbola, Sandarna, Skönvik, Sund, Svartvik, Torpshammar and Ytterstfors. Their annual production exceeds 400,000 long tons of dry chemical pulp and 200,000 tons of wet mechanical pulp. In addition to this, the new mill at Ostrand, now under construction, will have a yearly capacity of 100,000 tons of chemical pulp.

Airview of the Puget Sound Pulp & Timber Co. mill at Everett, Wash.

Puget Sound Pulp and Timber Company

New Sulphite Plant Strategically Located with Accessible Timber Stands and Deep Water and Rail Transportation

LATE in the fall of 1929, grading work was started on the new project of the Puget Sound Pulp & Timber company at Everett, Wash., and in June of this year initial operation was started in a new 175-ton bleached sulphite plant which with its varied facilities represents a $4,000,000 investment.

This project stands as a practically independent enterprise from its huge stands of quality hemlock timber accessible to the mill, to the deep water dock and rail facilities offering international and continental transportation. It comprises also several distinctive production features of major importance, and provides all its own raw materials except chlorine and sulphur, which chemicals are delivered directly by boat and barge to the private docks at the mill. Adjacent limestone deposits are owned by the company.

Forest Logs Used for Pulp

The main idea of this plant, growing out of the wide experience of its founders, is the belief that if high quality pulp is to be made, it is necessary to use pulpwood from the best of virgin timber. With this point in view, the mill is using high grade hemlock from accessible timber stands cut up in the company's own sawmill built in connection with the project. Logs are delivered in standard log rafts to their pond.

The sawmill is built with two sides, so that if virgin wood ever becomes too valuable to cut up for pulp use, the second side may be put into operation to cut the best logs into lumber for other purposes. Officials state, however, that they believe this time rather far distant and that it will be feasible to use the good timber for making high quality pulp for some years, under the best provisions which it is possible to provide.

The side of the sawmill now installed has a head rig of two circular 60-inch saws with special high speed carriage, tapered blocks on carriage, and sufficient power to "break down" a minimum of 200,000 feet of logs in eight hours. This carriage is a regular eastern pine device and the circular saw is used because the saw kerf is principally taken out of the sap through the operation of breaking down the logs to Jap squares, with chippers that will take squares 20-inch by 20-inch, thus eliminating saw kerf. The further advantage of circular saws over band rigs is that they avoid pulling the tannic or hemlock bark into the wood, according to officials, and this has already shown itself a feature of major interest.

An edger equipped with power shifters and an automatic trimmer connected with three conveyors are part of the sawmill equipment. The wood is automatically sorted without manual labor into three classifications. The first drop from the trimmer consists of pieces two inches to four inches in thickness and this is inspected for defects and cleaned. The clean side cut wood being three inches to six inches in thickness is cut six-foot and goes through the washing system on a separate conveyor to the automatic feed chippers in the chipper mill, being joined after the cleaning process with the first named wood.

The large wood, representing 10-inch by 12-inch to 20-inch by 20-inch squares is cut into 8-foot lengths and goes through a washing system on a separate conveyor into the chipper mill to the large 110-inch chippers. All the remainder is refuse and passes into devices for hog fuel, all waste being used in the boiler plant.

All motors of the sawmill are double race ball bearing, the synchronous type having been installed in every case where the designed load was over 40 horsepower.

Chipper Mill

Two rows of 40-inch wide steel belts carry the wood to the chippers. All of the larger wood goes on No. 1 steel belt to two 110-inch K-M-W special design log or cant chippers. A distinctive feature has been incorporated in these machines, the degree of the slope of the feed spout being changed, with an opening 22-inch by 22-inch square, the spout provided with a bed plate both on the bottom as well as on the side, preventing the wearing of spout lining to effect the successful chipping of wood of any size.

Over the second set of chippers which are K-M-W automatic feed, all the wood under 6 inches of variable size and length passes.

Chips are screened over late type screens and carried on a 40-inch inclined rubber belt to the top of the digester building. The chippers are of Swedish design, manufactured by

Karlstad-Mekaniska-Werkstad, Sweden. The conveying equipment was made by Link-Belt Company, and the screens and other items in the conveying system are those of the Hesse-Ersted Iron Works, Portland, Oregon. The rubber belting was supplied by Pioneer Rubber Mills.

A special hot water well is provided in the chipper building with a pump which also provides water for washing the logs in the slip.

There are 27 pumps throughout the plant, which were manufactured by the Bingham Pump Co.

Digester Building

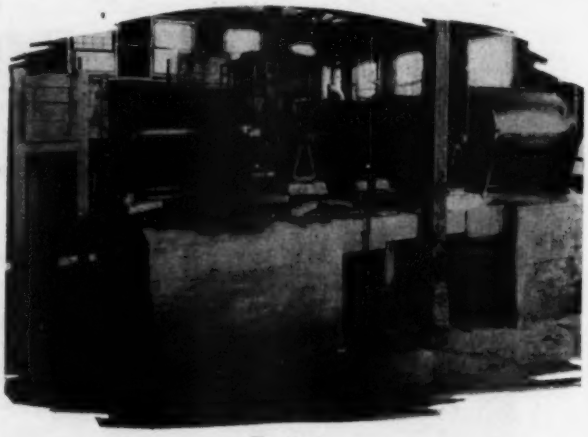
The digester building is high enough to provide storage for three charges above each digester, with bins designed so that no steam or other apparatus is needed to load the digesters quickly.

There are five 18½-ton yield digesters, installed by Puget Sound Machinery Depot. These are provided for either quick or slow cooking, and in addition provision has been made for converting them to the Mitscherlich system should this be required. Digester fittings are all of acid-proof bronze, including the large 16-inch blow valves. A. D. Jenssen Company installed the acid system.

The heavy cast iron blow lines drop into capacious retangular blow pits of concrete lined with fir tank lining, the bottoms being lined with acid-proof tile. The false drainer bottom is made of special drainer tile made in Sweden.

Directly on top of the blow pits are storage tanks for hot water washing in minimum time. From the blow pits the stock goes to the suction pit from which it is pumped to a mixing box over knotters and then washed over regular washers, this being another distinctive feature, providing two washings of stock before processing starts. Knotters, deckers and washers were installed by Improved Paper Machinery.

Leaving the washers, the brown stock passes through five



Knotters

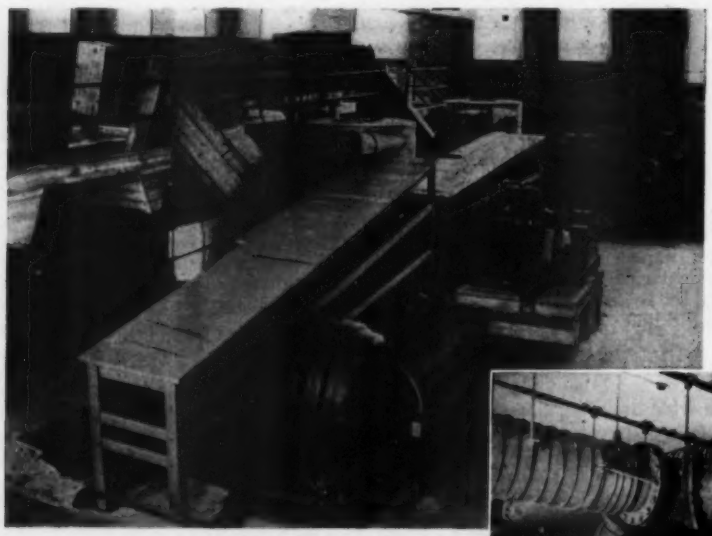
screens are operated in a series of choice stock with a flowing principle operating so that no dry screening is allowed. After the choicest stock is drawn off, the remainder is again screens are operated in a series of choice stock with a flow-stock then passes to the brown stock storage chests under the bleachers ready for the washing with Allis-Chalmers pumps, which precedes the bleaching.

Bleachers

The bleaching plant installed by Pulp Bleaching Corp., contains the latest type Wolfe two-stage bleaching system, with both first and second stage bleachers and the bleaching trough tile-lined. From the bleach washers the stock again goes to the mixing box passing over a full set of bleach stock rifflers and over a battery of thirty-four 14-plate flat screens, for a second screening before going through thickeners into the machine chests at the head of the pulp drying machine. No screen plates over .008 are used.

Dryers

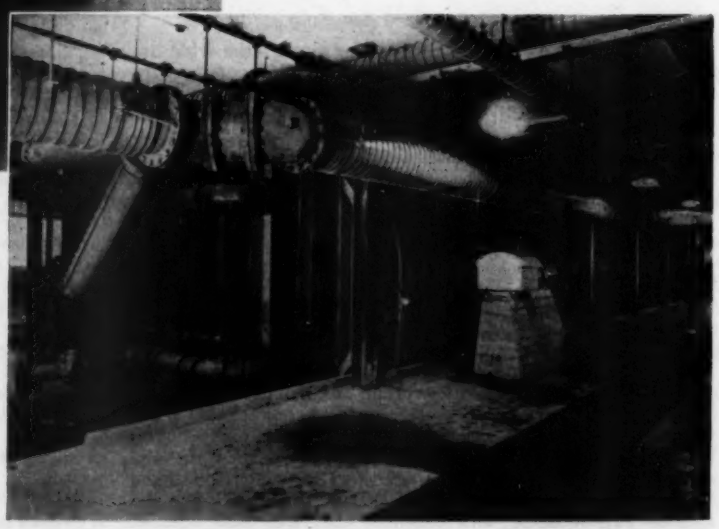
The dryers consist of two 154-inch fourdrinier drying machines manufactured by J. O. Ross Engr. Corp., equipped with felt presses and Peterson pre-dryers, having capacity of 100 tons each every 24 hours. These machines are the latest pulp drying type used on high grade pulp in Sweden, and the purpose of using two such



Two of the four chippers

K-M-W Swedish separators combing the fibers apart and assuring complete freeness. Into these separators, which are the first installed in this country, the stock enters at seven per cent consistency, and from these drops into agitating and blending tanks of wood construction, with capacity to blend the batches produced in the digester at that consistency. Pulpers and agitators were supplied by Noble & Wood Machine Co.

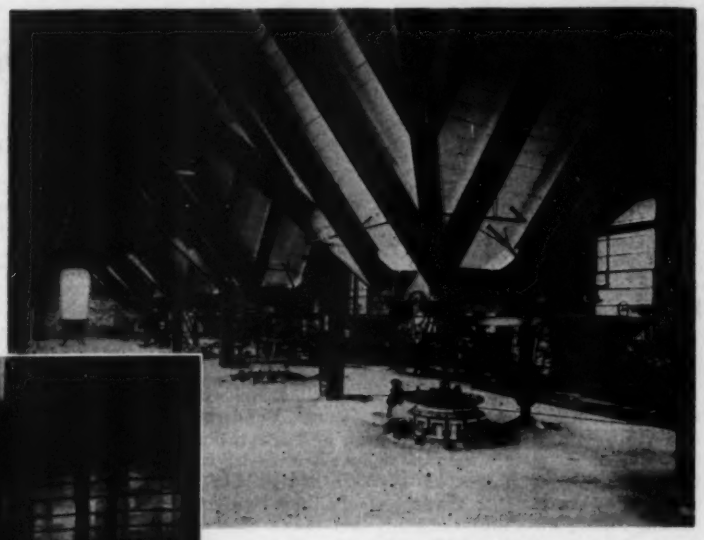
From the blending process, stock is pumped to mixing boxes and passed over brown stock rifflers large enough to accomplish complete riffling before the brown stock passes over a battery of fifty-six 14-plate flat screens. These



Blending tanks

large machines in a 175-ton plant is to permit a relatively thin sheet to be perfectly formed on the fourdrinier wire with drying at a minimum temperature that loss of strength through the drying process may be eliminated. The dryers have a pre-heated air fan system and the whole dryer room is provided with an air washer to insure cleanliness.

Two Biffar machines, made in Germany, have been installed in the plant for converting knots, tailing and all rejects into refined screenings which are in turn run over a single wet press machine and baled for shipment to roofing mills. The bales are carried by an overhead monorail carriage into pulp storage either by rail or water.



Digester charging floor

The blow pits

The boiler plant has a double furnace providing for either use of hog fuel or oil, and the generating capacity is 8,000 horsepower. To economize on fuel the hot air from the stack is used over through a preheater air installation. All of the condensate from the plant is returned to the boiler plant, including the turbines driving the pulp machines. Another distinctive feature in the interest of safety and sanitation is a set of cinder cone burners.

Acid System

A feature of the Jenssen acid plant which has not heretofore characterized any plant on the coast is a skip hoist lift for handling stock to the towers without any manpower at the end where stock is discharged. Rehandling of sulphur, lime and other materials is also eliminated by an overhead rail line from the dock directly into the chemical storage departments. Similar efficiency is achieved in the bleach liquor plant installation, equipped to handle either burned or hydrate lime, with chlorine cars located on a track adjacent to the plant, with direct connection directly from the tank cars, obviating the need of chlorine containers.

The Puget Sound Pulp & Timber Company was first heard of early in 1929, the organization being perfected to take over and consolidate the San Juan Pulp Manufacturing Company of Bellingham, the Fidalgo Pulp Manufacturing Company, Anacortes, the Clear Lake Lumber Company, Rucker timber interests and other enterprises that had facilities or capital to contribute to this pretentious project of pulp and timber development.

Ossian Anderson is president of the company. H. W. Bunker, of the Coos Bay Lumber Company and a former Seattle banker, is chairman of the board of directors. Vice-presidents of the company include P. F. Knight, vice-president of the Mutual Lumber Company; William Morrison, vice-president of the Morrison Mill Company. The secretary is H. R. Lawton.

Other members of the directorate include U. M. Dickey, president of the Consolidated Dairy Products Company; O. M. Green, president Olympia National Bank; A. M. Robbins, president Clark-Nickerson Lumber Company; Peter E. Schmidt, president Schmidt Estate Company, and W. N. Winter of the Pacific Coast Telephone Company.

Hardy Ferguson of New York was consulting engineer for the project and J. McCarthy is resident engineer for the company.

George W. Pressell, second vice-president and general sales manager of E. F. Houghton & Co., Philadelphia, Pa., is making a tour of the middle western and Pacific coast states, visiting the Los Angeles, San Francisco, Portland and Seattle offices of the company.

Certificate Presented to Thomas J. Burke

The annual meeting of the American Trade Association Executives was held last week at Niagara Falls, Ontario, concluding with a large banquet at the Clifton hotel. A pleasing ceremony took place during this banquet when John N. Van der Vries, secretary of the National Institute of Trade Association and Commercial Organization Executives presented Thomas J. Burke, director of the Cost Department of the American Paper and Pulp Association and John G. Williams, secretary of the National Association of Taxicab Owners with the Institute's certificate.

Mr. Burke is the first trade association executive in the Pulp and Paper Industry to receive this certificate, which requires attendance at Northwestern University for two weeks each year for three years, and includes a course of reading in fundamental subjects relating to trade association work.

The Philadelphia sales office of Cutler-Hammer, Inc., is now located on the tenth floor of the new Terminal Commerce building, 401 North Broad street, where a stock of the more popular C-H motor control, wiring device and safety switch items will be carried for immediate delivery. F. J. Bird is manager.

According to a recent announcement, the Fuller Lehigh Company, Fullerton, Pa., has removed its Cincinnati office from the Traction Building to Carew Tower. H. E. Martin will continue in charge as manager.

Fall Meeting of Southeastern Superintendents

Address of National President and Technical Papers Special Features—Delegates Entertained by Champion Fibre Co.

THE annual Fall Meeting of the Southeastern Division of the American Pulp and Paper Mill Superintendents' Association was held on Friday and Saturday, October 3 and 4, at Asheville and Canton, N. C.

The meeting opened promptly at 9 o'clock Friday morning at convention headquarters in the George Vanderbilt Hotel, Asheville, with Carl Jentz in charge of registration. After renewing old acquaintances, the members were driven through the beautiful mountains of Western North Carolina, "In the land of the sky," to Canton, where they visited the plant of the Champion Fibre Company and were shown through the various departments. Possibly one of the most interesting things was the power plant, consisting of two Heine V-X type powdered fuel boilers with a 450-lb. pressure and 700 degrees F. superheat.

The generator room also attracted considerable attention especially the battery of turbines consisting of Westinghouse non-condensing bleeder type turbo-generators working at 400-lb. throttle pressure. A remarkable feature about one of these turbines was that in its installation, just 16 days elapsed between the unloading of the first part and bringing the unit up to speed.

Another department which drew the attention of the visitors was the new sulphate smelters. This unit had been put into operation recently. Many comments were made by the visitors upon the cleanliness of the mill—it being voted one of the cleanest mills visited. Considerable time was spent in the machine and beater rooms.

After inspecting the plant, the members thoroughly enjoyed fried chicken which was served in the dining room in the main office building.

President Magnus Speaks at Luncheon

The luncheon meeting was called to order by the chairman, R. J. Sprang, who introduced Mayor David J. Kerr, of Canton. In a few well chosen remarks, Mr. Kerr welcomed the members in behalf of the town of Canton, also the Champion Fibre Company, of which he is operating superintendent.

Carl Magnus, National President of the Association, replied to Mayor Kerr's welcome in a most fitting manner, after which he gave the opening address of the session. President Magnus spoke of the enjoyment and inspiration gained from attending these meetings, and expressed appreciation for the support and co-operation of the members of the division. But he seriously laid before them the importance of their task as superintendents. He reminded them that the industry is challenged with "Pulp and Paper at a Profit" which will demand of every member the best he has to give. Mr. Magnus stated that never has the creative genius to increase consumption of pulp and paper through new uses, improved product, or lower cost, been at a higher premium. The members were admonished that the association meetings are held for the purpose of sharing suggestions and helping each other to solve difficult problems, which will benefit the industry at large. As production men, the superintendents should constantly strive for self-improvement, not only to be specialists in the particular field of pulp and paper, but better all-around men. The ideal superintendent, as outlined by President Magnus, is the broad gauged, honest-to-goodness one who is sufficiently interested in men to acquire sufficient understanding of psychology to recognize and interpret the factors governing human behavior. He will have a working knowledge of fundamental chemistry and engineering principles controlling the basic processes of the industry, or through persevering study will acquire this knowledge. This ideal superintendent will be an accountant to the extent of knowing how his cost figures are built up, what they contain, and their significance. He will have the full confidence of the sales department and through it acquire a contact with the printer and consumer which should enable him to produce a better product for a particular purpose or suggest ideas for new products. In brief, this ideal will know or acquire the foregoing knowledge and intelligently apply the same in the co-operation, co-ordination of men, materials, machinery and money to the goal of producing "Pulp and Paper at a Profit."

The meeting then adjourned to the Champion Y.M.C.A. where the afternoon session was held. The first speaker at this meeting was C. D. McCollester, of the Kalbfleisch Corporation, who spoke on "Manufacture of Alum."

Sulphate of Alumina

Aluminum sulphate, erroneously called alum, is today being used in many ways mentioned by the speaker. It is in the paper industry, however, that it finds its greatest use, not only in the purification of the process water and in tub sizing, but it is essential in the sizing of paper with rosin size and when certain classes of dyestuffs are used.

For many years papermakers used alum as sort of a cure-all. As scientific control became adopted in place of the old "rule of thumb" methods, experimenters found that best results were attained only through careful adjustment of the alum ratio. Excesses of alum were found to be detrimental not only to the product but also to the mill equipment and machine clothing. Insufficient alum, on the other hand, caused foam and pitch trouble, "bleeding" of dyes, inefficient sizing and many other annoyances and losses.

Each grade of paper has its own alum requirement. The increased demand for standardized material was met by the alum producers who had for many years been striving to improve the qualities of their product.

Mr. McCollester traced briefly the production of aluminum sulphate and potassium aluminum sulphate, its compound, with potassium sulphate, from the earliest times. About the middle of the 19th century it was discovered that alum could be produced by treating china clay with sulphuric acid; later that bauxite which is an impure form of aluminum hydroxide could be used in place of china clay. Since then bauxite has been used in increasing amounts until today practically all alum produced is made from this material.

Some of the best bauxite produced comes from Dutch Guiana, where men toil day and night to prepare this ore for the manufacture of alum.

First, the dirt is carefully removed, great care being taken to prevent the dirt from being mixed with the ore. The ore is next loosened and then transported to a washing plant where it is refined and concentrated by washing away the clay which contains a large percentage of silica, an impurity. The ore is then crushed and all excess moisture removed by drying. The ore is then ready for shipment.

It is at the mine that the control work is started. Before, during and after mining, a close check is kept on the bauxite by means of chemical analysis. By doing this the alum manufacturer who mines his own ore is assured of a reliable supply of the right grade of ore.

After reaching the alum plant, the bauxite is ground to the necessary fineness and is then ready for digesting with sulphuric acid for the forming of alum. The careful manu-

Photo of delegates attending fall meeting of Southeastern Superintendents at Asheville and Canton, N. C.

facturer again analyzes the bauxite at this point to be absolutely sure of its quality.

The sulphuric acid is pumped into huge lead lined tanks or digesters, as they are called, and the necessary bauxite added. The mixture is then heated with steam until digestion is completed. During this digestion period great care must be taken that the reaction is properly performed. The careful alum maker tests the cooking mixture every half hour. By keeping this close check he is able to produce a very uniform product. Upon completion of the cooking operation, the liquid mass, now at quite a high temperature, is dumped into large settling tanks and allowed to settle. The alum solution then goes through a long and continuous cleaning and separating process for the removal of the impurities. This operation must be carried on in tanks lined with lead or other suitable materials due to the corrosive nature of the alum solution, which, after being cleared of impurities, is a light greenish blue in color and now ready for the next step, concentration.

The liquor is pumped into specially constructed evaporators and the excess water present driven off by means of indirect heat. When the concentration is finished, the material is poured into cooling pans and allowed to solidify. When cool, the alum is analyzed. If, for any reason, it is found unsuitable, it is returned to a special digester, dissolved and returned through the purifying process. By this means, the manufacturer is able to furnish an alum of uniform quality. Alum which conforms to specifications is now ready to be ground.

As the different consumers require different sizes of alum, it must be crushed, ground and screened in such a manner to produce the required grades. Thus the manufacturer is able to procure the various sizes required.

The crushed or ground alum is next packed into bags or barrels and is then ready for shipment to the customer.

Mr. McCollester's paper created considerable discussion, some very pertinent questions being asked regarding alum and the difficulties which the papermakers have with its use. For instance, one member asked, "Why is it that we are sometimes troubled with what we papermakers call alum shiners?" Another question was "How are you going to determine the correct quantity of alum to use in the different grades of stock furnish?"

Heat Reclamation

Following the discussion of Mr. McCollester's paper, the subject "Paper Machine Drainage and Machine Room Ventilation" was covered by T. H. Farnsworth of The Farnsworth Company.

Mr. Farnsworth discussed the subject of heat reclamation. Great strides, he said, have been made in the economic generation of steam, but no comparable progress has been made in the economic use of it after it has left the boiler, either as high pressure steam direct into process heating or from the turbines or engines as exhaust steam used for heating, drying or process.

Steam leaving the turbine or engine has very nearly the same degree of heat present as when it left the boilers. There are many places where this heat is lost before it leaves the pipe lines into drying or heating units. Steam purifiers on lines leading to and from engines or turbines mean increased efficiency.

Steam entering paper machine dryers or heating units in its average state or pressure has an average of about 1,000 B.t.u's per pound of steam, and this figure was used by the speaker to describe the possibilities of heat reclamation. In paper machine dryers, the rapidity with which the steam is condensed depends upon the temperature difference between the inside and outside of the dryer shell. The pressure of steam in the dryers fixes the inside temperature, and the temperature of water in the paper on the outside fixes the outside temperature.

The first wet end dryer condenses the most steam as the latent heat is given up from the surfaces in contact with coldest paper, and as the paper passes over the dryers, there is less condensing effect until the last dryer is hardly using one-quarter the steam that the wet end dryers use.

Measuring steam used in the drying of paper in terms of B.t.u's, of the 1,000 B.t.u's entering the dryers, 780 go into the drying of the paper and 220 B.t.u's are left in the condensate. Thus a paper machine working 100 tons of paper and using 3 lb. of steam per lb. of paper means that in 24 hours, 600,000 pounds of steam are used and that each pound of steam means 600,000,000 B.t.u's are delivered to the dryers; 468,000,000 B.t.u's go to the roof, while 132,000,000 are returned in the form of condensate to the boilers. A big portion of the latter is lost in many instances because allowed to go to open vented hot-wells or drained to open feed water heaters, etc.

The condensate that collects in the dryers represents but one-fifth the number of B.t.u's that the steam had when it entered the dryers and, therefore, has only one-fifth the drying or heating capacity. The quick removal of this by-product water is most important if maximum B.t.u. heat transfer is expected.

The quick and positive removal of condensate from dryers puts so much more drying surface to work that the steam pressure is reduced to dry, which reflects on the engine. Reduced back pressure and every pound pressure reduced decreases the steam consumption of the engine by a half pound of steam for every engine horsepower used.

The proper system of utilizing exhaust steam for heating and de-aerating the water to its maximum temperature before it is fed into the boilers is of the utmost importance in the program of heat reclamation.

Lack of knowing how to absorb exhaust steam, not used in drying of paper, means that in these days of small orders and many changes, the heat balance in the mill is changed to one of drying many weights and grades of paper in one day, and this means that while on one grade of paper all exhaust will be absorbed and some live steam also, while the next weight will only require a portion of the exhaust steam and of course no live steam, which in many instances means that the excess exhaust steam is going to the roof. With proper arrangement and knowledge of application, this excess exhaust steam could be used to heat feed water, beater water,

heating buildings, etc., in substitution of possible live steam.

Proper ventilation of the machine room plays such an important part with respect to steam costs in drying paper that the advice and recommendations of specialists in this work should be closely followed.

Dinner Meeting

At the close of the afternoon session, the members motored back to Asheville where the convention assembled at 7 p. m. for the dinner session. D. J. Kerr was chairman at this meeting and following the dinner he introduced Robert W. Griffith, of the Champion Fibre Company, who gave a most enjoyable and fascinating address on the subject "The International Problems of Industry." Mr. Griffith's address was based upon his observations while traveling through Great Britain, France and Germany. He prefaced his remarks with the statement that he believed the main reason for the prosperity and good business enjoyed in America is due largely to the liberty and privileges enjoyed by the American women over that which women in European countries experience. In his opinion, the American women in reality hold the purse strings. This has, of course, created and stimulated business in this country. With specific reference to his subject, Mr. Griffith said he believed America had suffered from inflated values and that the depression through which we are now passing will ultimately restore normalcy. He brought out the thought that this is a good time to clean house and make such improvements and repairs as are deemed advisable in order to produce the very best product at the lowest cost.

Touching upon the tariff, the speaker brought out that it has no place in politics; that its purpose is to regulate commerce, thus it is essentially a commercial weapon. The tariff undoubtedly served its purpose for the development and protection of home industries in the early days when pioneer industries needed a constant supply of capital for their development. Now, by reason of mass production, we are able to supply the country's need for a year within nine months. This means that if our plants operate at capacity for 12 months, we shall have to export the equivalent of three months' production or be constantly faced with a surplus of manufactured products.

The speaker stated that perhaps the greatest problem of international industry involves the question of raw material supply, and in this respect the United States is singularly blessed with tremendous resources. Our own industry is well secured in the matter of raw material, but there is need of a wise conservation policy invoking the aid of scientific forestry to perpetuate the supply of pulpwood.

Direct vs. Indirect Heating of Digesters

The Saturday morning session opened with Chairman Sprang in charge. He introduced E. N. Christianson of the Fibre Making Processes, Inc., who spoke on "Direct vs. Indirect Steaming of Soda-Sulphate Digesters, and Other Pulp Mill Problems."

Discussing direct vs. indirect steaming of soda and sulphate digesters, Mr. Christianson submitted the following statements covering the stationary and the tumbling digesters using direct steam and the stationary digester using indirect heating with forced circulation.

The stationary digester using direct steam has the advantage of low first cost and simplicity. The disadvantages are, high heat and chemical consumption, poor quality and low yield of pulp.

The tumbling digester has the advantages of even heating, low chemical consumption and high yield. The disadvantages are high first cost, small units, larger buildings and complicated equipment and operation.

The stationary digester with indirect heating, familiarly known as the Morterud System, combines all the advantages of both and amplifies them. Liquor is drawn off at the bottom of the digester through a screen, passed through a closed heater and re-introduced into the digester at the top by means of the circulating pump. The circulation is continuous during the heating period. Large units are made possible by this positive circulation.

Indirect heating produces the strongest pulp. To cite two cases of direct digesters, the strength was increased respectively 30 and 25 per cent by the addition of indirect heating. The comparison with tumbling digesters under like conditions showed the following:

Pulp from tumbling digesters reached a breakdown strength of 165 to 170 per cent in 140 minutes. Pulp from stationary indirect cooks reached 200 per cent in 100 minutes, indicating a stronger pulp with easier beating characteristics. The pulp is uniform throughout as there are no over or under heated portions of the digester. The screenings and shives are materially reduced.

Indirect cooking reduces the chemical consumption. To cite the case of one mill, the total chemical charge to the digester was reduced six per cent by the addition of indirect heating.

Indirect heating effects a marked economy in heat. The last mentioned mill reduced the steam to the digester approximately 400 lb. per ton. In one extreme case on soda pulp, this amounted to approximately 4,000 lb. per ton. Theoretically the heat requirements of the digester should be the same. However, the saving is due to lessened relief. Only one short relief is required for indirect heating as the circulation is independent of the relief. Pressure and temperature follow each other very closely. If the sizes of the heater and the circulating pump are properly co-ordinated there will be practically no top pressure in the digester. As no dilution takes place with indirect heating there is approximately 4,000 lb. of water per ton less to be evaporated. The quantity of black liquor to the recovery room is reduced approximately 15 per cent and its density is increased. This has a marked effect on the evaporators both as to size and steam consumption. One mill using indirect heating has no vacuum evaporators at all, the liquor going direct from the washroom to the discs. This mill is cooking hemlock and jackpine and has no difficulty whatever in maintaining high production on each recovery unit. This mill uses under 4,500 lb. of total steam per ton for the entire pulp mill.

Indirect heating simplifies the digester operation. There are no valves to be adjusted or digesters to be rotated during the cook. The circulating pump is simply started and the steam turned on full and left on until the digester is up to temperature. As mentioned before only one short relief is necessary. The human element is removed to a large extent and all cooks are uniform both as to time and quality.

Indirect heating increases production. The cooking time can be considerably reduced. The capacities of the evaporators and recovery room are also considerably increased. The tonnage of the digester per cook is also considerably increased as the liquor being circulated during the filling acts to pack the chips.

Concluding his discussion, Mr. Christianson said, "It is significant to note that of the soda and sulphate mills built in the United States and Canada during the past six years, three have tumbling digesters, three have stationary direct digesters and six have indirect heating. It is also significant that the two new soda mills in this group both have indirect heating. During this time, five older mills have changed to indirect heating."

Round Table Discussion

F. J. Morrison, of Hummel-Ross Fibre Corp., Hopewell, Va., then took charge of the meeting and very capably led a round table discussion on the subject "Sulphate Pulp and Coarse Paper Manufacture." This discussion brought out a number of ideas and proved quite valuable.

D. J. Kerr, chairman of the nominating committee then made his report. The following ticket was nominated and unanimously elected: R. J. Sprang, chairman; H. A. Helder, first vice-chairman; H. E. Whitaker, second vice-chairman; F. J. Morrison, third vice-chairman.

Saturday afternoon was spent in sightseeing and various pursuits, the majority, however, preferring the golf links where some hard battles were fought for championship.

The convention closed with a banquet and social evening which was a most enjoyable occasion. The splendid feeling of good fellowship which prevailed from the first carried through to the close. A number of new members were added to the organization.

Northwestern Supers Meet at Wausau

Large Delegation Enjoys Two-Day Meeting and Participates in Discussion of Timely Subjects

A BANQUET and ball Saturday evening in the main dining room of the Beaumont hotel at Green Bay, Wis. closed one of the most notable conferences yet held by the Northwestern division, American Pulp & Paper Mill superintendents' association. Roy H. Kelly, Wausau, was toastmaster.

Nearly 300 superintendents and their ladies sat down to the banquet, which was served on paper-covered tables, a large paper napkin, with the association's name printed in gold, at each place. Music during the meal and for the dance which followed was furnished by the Venetian club orchestra, of Madison. Other entertainment features included vocal solos and readings by Green Bay talent, and the presentation of awards won in the golf tournament held Saturday morning.

Judson G. Rosebush, treasurer and general manager of the Northern Paper Mills, was the speaker of the evening, and gave an inspiring address which was enthusiastically applauded.

At a business session Saturday afternoon, preceding the banquet, James R. Simpson, Wisconsin Rapids, Wis., paper mill superintendent of the Consolidated Water Power & Paper Co., was elected chairman of the conference, succeeding P. D. Bradley, Green Bay. Harold J. Skinner, Wausau, Marathon Paper Company, was elected vice-chairman, and C. E. Jackson, of the Consolidated, was named secretary. Wausau extended an invitation for the spring conference, and Wisconsin Rapids was indicated as the site of the next fall conference. The choice will be announced shortly by the new officers

The election was followed by a short talk by Cash Whipple, of the Beloit Iron Works, in which he discussed late improvements on paper machines, dwelling especially on developments in chain drives and "shake" equipment. Then the conference broke up into three sectional meetings, one on kraft, one on sulphite, the other on artificial pulp stones, which discussed details of those three fields. Presiding officers were, respectively, R. M. Radsch, Thilmany Pulp & Paper Co., Kaukauna; Paul Sievert, Marinette & Menominee Paper Co., Marinette, and Roy Kelly, of Marathon Paper Mills, Wausau.

Cooking Sulphite Pulp

Most efficient use of steam, both for motive power and in the cooking of sulphite pulp, was the principal topic at the first regular session Friday afternoon in the Attic room of the Beaumont hotel. Three of the four papers presented were connected with this subject.

L. F. Bunde, of the Nekoosa-Edwards Paper Co., sounded the keynote in his address on "Economical Steam Pressure" when he stated that from 25 to 50 per cent of the cost of the finished product went for steam and power, and anything which would reduce this cost was of lively interest.

Modern practice, he said, favored pressures around 400 pounds to the square inch for paper mill work, although utility plants were working at even higher pressures, 600 and 1,200 pounds being common. In Europe, he declared, industrial plants led in the high-pressure field, some of them going as high as 3,300 pounds.

Above 400 pounds, however, the speaker said, all special equipment is usually required; valves, fittings, piping and everything coming in contact with boiler pressure. Up to 400 pounds these fittings are now usually stocked by supply houses. Further, above this pressure distilled water usually considered necessary for the boilers, adding the cost of evaporators to that of the other equipment. Although higher pressures may be advisable where there is by-product electric power to be produced, a straight paper mill will do best with 400 pounds, the speaker concluded.

H. W. Gochnauer, chief engineer of the Northern Paper Mills and the Northern Electric Co., took issue with Mr. Bunde in the discussion which followed, favoring a 1,200 pound plant because of the greater amount of power which could be produced with a given fuel consumption. Such a plant is contemplated by the Northern, he said.

Mr. Gochnauer's paper described a steam accumulator in use at the Green Bay mill, in order to meet the uneven demands of the sulphite plant with a minimum disturbance of boiler pressure.

This accumulator, he said, is a 10,000 cubic foot capacity tank, about three-quarters full of hot water, with steam introduced into the water. It operates on the principle that water will store steam as the pressure and temperature are increased, and release them as it is reduced.

James R. Simpson (left), newly elected chairman, receiving congratulations from P. D. Bradley, former chairman

The result has been, he said, that the rating of the boilers has been increased because of the constancy in the demand, with no "peaks" to meet; firing is even, better efficiency has been attained in turbines and engines, enabling the paper machines to be speeded up. The accumulator, he said, is saving the Northern $7,500 a year in coal, or 17 per cent on the investment.

S. E. Tomczak, sulphite superintendent of the Flambeau Paper Co., discussed "Temperature Control in Cooking Sulphite Pulp," advocating control by the use of steam flow meters, since the quantity of steam, he declared, controlled the degree of heat. While the best cooking formula will be reached by experimentation at each mill, he said, raising the temperature at a uniform rate until the last two hours, and then a little slower, will produce a pulp that has the qualities desired by most mills.

This subject was discussed at considerable length in the question box section that followed the Friday evening banquet, most of those present favoring a longer cooking period, 9 hours and better, as against the 7 and 8-hour cooks. The yield from the wood was larger, they said, and steam consumption no greater; some claimed it was less.

The other paper, presented by A. E. Montgomery, of the J. O. Ross Engineering Corporation, described the Grewin (pronounced Gra-ween') system for removing moisture from the dryers of paper machines. Originated by Frederick Grewin in his mill at Norrkaeping, Sweden, it is now in use in 60 or more European mills. The first installation in the midwest was in the mills of the Marathon Paper Co., near Wausau.

The system employs jets of heated air, at high pressure and high velocity, which act like steam boiler injectors, drawing room air into the moisture-filled pockets around the dryers, and carrying the moisture away, Mr. Montgomery explained. The ducts are very small, no hoods or fans are required, and the power consumption is only a fraction of that required by other systems. An even drying is produced, he said, eliminating the "cockles" produced when the edges remain damp while the center is dry, resulting in uneven shrinkage.

"Cockles" also received much attention at the question box session, the consensus being that uneven pressure and lack of alignment in the dryers were as frequent a cause as uneven drying. One speaker predicted that 10-foot and even 12-foot dryers, compared with the 3- and 4-foot dryers now used, would be the solution.

The Three M's of Production

Prior to the main banquet Saturday evening, a stag banquet and smoker was held Friday evening, with R. M. Radsch as toastmaster. After a dinner of steak and planked whitefish, and a short program, the balance of the evening was devoted to a "question box" which proved of great value.

Mayor John V. Diener welcomed the gathering, and spoke briefly of the history of Green Bay. In conclusion, he expressed the gratitude of the city toward the paper mill executives for the manner in which they had kept their employees at work through the present period of depression.

Joseph M. Conway, president and general manager of the Hoberg Paper & Fibre Co., spoke on "Management as Applied to Plant Operation." He traced the growth of management, from the old days of the tradesman with one or two apprentices to the great plants of today. The prime requisite in a manager, he said, is the ability to know men, rather than to know every detail of the work. He stressed the need of good will, declaring that the good will of his subordinates was as necessary to a manager as the good will of customers was to a business man. Department heads, he said, often were loth to impart information to subordinates for fear of being supplanted, and decried this as an erroneous and narrow viewpoint, since the manager's job depends only on whether his department functions properly. He emphasized the importance of cleanliness and sanitation for better work and prevention of accidents. "Men, Machinery and Material are the 'Three Big M's' of efficient production, and the most important of these is Men," he concluded.

A surprise feature was the four-round boxing bout between Warren and Wallace Lom, 13 and 12, with their father, Andrew Lom, as referee. The youngsters gave a high-grade exhibition, showing excellent footwork and technique, and were enthusiastically applauded. The match was declared a draw.

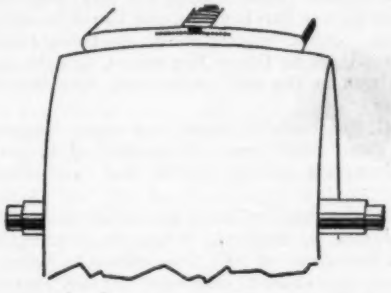
Visitors Entertained

Social high-lights of the session, other than the banquet and ball, included a golf tournament for the men Saturday morning at the Oneida Golf & Riding club, and a miniature golf tournament for the ladies on the "Piffel" course at Bay View beach. Other items on the ladies' entertainment program included a bridge party at the Hotel Northland, a theater party at the new $1,000,000 Fox theater, and a trip through the Wisconsin State reformatory. Mrs. A. E. Cofron, wife of the president and general manager of the Fort Howard Paper Company, was in charge of the ladies' entertainment.

Arrangements for the conference were made by a committee headed by P. D. Bradley, assisted by M. J. Ketter, F. J. Timmerman, and R. M. Radsch. Fred G. Lier was secretary, and handled the multitude of details of this post with no confusion. He provided a stenographic staff to transcribe and file copies of all papers and proceedings.

Cincinnati Rubber Develops New Belt Construction

A new construction in transmission belting is announced by Cincinnati Rubber Mfg. Co., Cincinnati, Ohio. This new belt, which is called Cincinnatus Duoflex because of its duoflexibility both crosswise and lengthwise, is designed to give greater pulley contact thus delivering more horsepower. It is built to fit all kinds of pulleys, flat or heavy crowned, large or small—with a close pulley hug by reason of an auto-



mobile tire cord insert which gives it remarkable crosswise flexibility and exceptional adhesion under the seam. Where many belts slip and strain, Cincinnatus Duoflex is said to operate with slack, delivering greater horsepower, longer service and life with less fastener trouble.

Cincinnatus Duoflex is a development of practical experience and scientific engineering—factory tested to meet the demand for greater power transmission in modern high speed production. In short, its advantages are: Maximum power transmission; fits any type of pulley; can be operated with more slack and less tension, and has flexibility combined with great strength.

Rubber and Monel Metal Discussed at Holyoke

"Rubber as it Pertains to Paper Manufacture," and "Monel Metal and Its Production," were the subjects of papers read before the Connecticut Valley Division of the American Pulp and Paper Mills Superintendents' Association at a meeting in Holyoke, Mass., on Saturday, October 4. E. L. Tewksbury, of Stowe & Woodward Company, Newton Upper Falls, Mass., gave an interesting account of the history of rubber from the time of its discovery and its application to paper machinery in press rolls, etc., and at the close he answered numerous inquiries from the floor.

R. E. Case, of the Development Research Department of the International Nickel Company, New York, gave an unusually interesting and informing historical and technical study of monel metal, its production, properties and application in the paper industry.

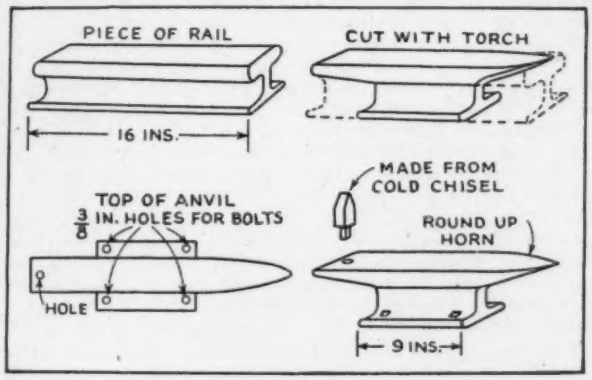
The meeting was preceded by a dinner at the Hotel Nonotuck for which 60 covers were laid. Matthew V. Horgan, chairman of the division presided.

Fred L. Becker, assistant sales manager of the Continental Paper and Bag Company, of New York, died on September 16, in the Mount Vernon Hospital, Mount Vernon, N. Y. Mr. Becker was born and educated in Cleveland, and was manager of the Cleveland branch of the company for 16 years. Four years ago he came to New York to assume the position which he held at the time of his death. The body was taken to Cleveland for funeral services and interment.

Practical Helps for the Mill Man

Handy Bench Anvil

ALMOST interesting handy bench anvil was described in the August 1930 issue of **Industrial Engineering**. It was made from a 16-inch piece of 60 lb. rail which had been scrapped. This piece was cut, as illustrated in the accompanying sketches, through the use of an acetylene torch. The



horn was shaped by a blacksmith in the shop where the anvil was used. Cutters for the top were made from cold chisels. The lower end of that portion of a chisel used for a cutter was ground down to a shank that would fit the ½-inch hole in the top of the anvil. A light anvil of this kind should be found very useful in maintenance work around a pulp and paper plant.

Safety Sign

OVER the doorway leading into the time office of a board plant may be found a sign of such size as to be easily seen at a distance. The sign bears the following message: "Keep this light going and help us win Safety

First contest. When this light goes out, your fellow workman is injured." The light to which reference has been made is red in color and is located directly beneath the sign and immediately above the top of the door leading to the time clock. The color of the light and the location of both the sign and light attracts the eyes of everyone entering the building. Therefore, the idea of safety is emphasized upon every employee when starting work and also upon leaving it. Safety cannot be stressed too much. Accidents are expensive both to the employee and the employer.

Concrete Base for Warning Lantern

CONSTRUCTION work around a pulp and paper mill often necessitates the use of red lanterns to warn passers-by of danger. An ordinary lantern with the oil container completely embedded in a hexagonal block of concrete has been

found most satisfactory by the West Penn Power Co. of Pittsburgh. Such a lantern according to an item in the June 1930 issue of the **National Safety News** is most economical from the standpoint of theft. Likewise, a lantern of this kind, weighed down at the base, is seldom blown or knocked over.

Window Cleaning Essential

MANY plants are careless in their window cleaning habits. Regular window cleaning should become a part of the regular routine work of the plant. Dirty windows are expensive. They necessitate the use of an excess of artificial light and at the same time increase the possibilities of accidents. Clean windows tend toward greater efficiency and a better morale on the part of the working force.

The Worthington Pump & Machinery Corp., New York City, announces that it has acquired the Gilman Manufacturing Co., East Boston, Mass., and is expanding its line of pneumatic service to mines, quarries, contractors and industry, manufacturing under one head, with one responsibility, the Gilman line of rock drilling equipment. The personnel of the Gilman company will remain unchanged.

C. C. Fuller has been appointed manager of the New York office of The Foxboro Company, Foxboro, Mass. He will be assisted by K. L. Barton, R. A. Rockwell and F. J. Leerburger.

The Month at Washington

AT the forthcoming session of Congress in December efforts will be renewed to obtain action promoting an international conference to consider world-wide adoption of the new 13 month calendar. A joint resolution is pending before the house committee on foreign affairs which was introduced by the late Rep. Stephen G. Porter (Rep. Ga.), chairman, requesting the President to call or accept an invitation to participate in such a conference. The resolution was introduced last April, but in the rush during the closing days of the session it was left to be acted on next winter.

Calendar reform will be taken up at the next general conference on communications and transit to be held under the auspices of the league of nations in 1931. The United States, although not a league member, will be represented at the conference. Passage of the Porter resolution would insure American participation in further sessions designed to make the new calendar effective.

National committees are working in a score of countries, including the United States, in an effort to advance the calendar revision plan. The American Committee is headed by George Eastman of the Eastman Kodak Co., and is composed of leaders in business, industry, labor, science and politics. The calendar reform movement has progressed rapidly in this country, approximately 100 large business concerns having adopted the new calendar. This number includes a good percentage of paper mills.

Business Survey Shows Improvement in Paper and Pulp—Decided improvement in production of wood pulp and paper was shown during August according to reports from the industry compiled by Julius H. Barnes, chairman of President Hoover's National Business Survey Conference.

The industry is now in a much more substantial position than last year because not only is production improved, during the current year, in spite of a slight recession during July but stocks of pulp and paper have been kept down and are reported to be considerably below the stocks on hand during this season last year.

In his review of the pulp and paper situation based on reports from the industry, and from 114 mills, Chairman Barnes summarizes the present conditions on both paper and pulp, as follows:

Paper—Wrapping, tissue and building papers were the only grades in which the August 1930 daily average production exceeded that of July 1930. In all the other grades, the trend of the daily average production continued to run below the level of the preceding month, while tissue was the only grade which did not continue to run below the level of 1929.

Inventory increases over the July level were registered by the following grades: Newsprint, paperboard, wrapping, writing, and hanging. As compared with August 1929, increases in inventory were reported in the following grades: Newsprint, book, writing, tissue and hanging.

Pulp—The August daily average production of groundwood, kraft, sulphite and soda pulps continued to run below the level of last year, but only soda and groundwood pulps fell below the previous month's daily average. The trend of the daily average production of groundwood and soda pulps has been sharply downward during the last few months with the result that stocks are 10 and 20 per cent respectively, below the level of August 1929.

Improvement in the daily average production as compared with July 1930 was witnessed in bleached, easy bleaching, Mitscherlich and news grade sulphites as well as in kraft pulp. There has been some accumulation of stocks in these grades but the tonnage was not large.

Census Gives High Rank to Paper, Printing and Allied Group—The paper, printing, and allied industries combined ranked fourth in 1927, with respect to the value added to materials by manufacturing among the 16 major groups into which the Bureau of the Census divides the country's manufacturing industries according to the yearbook for 1930 made public by Secretary Lamont of the Department of Commerce, on September 22. The high ranking position of this group is an indication of the high standards of living in the United States, Secretary Lamont emphasizes.

Summarizing the pulp, paper, and manufactures statistics Secretary Lamont pointed out that the total paper production in 1928, the latest year for which complete figures are obtainable, was 10,403,000 tons. It is estimated that the production of 1929 exceeded that quantity by about 5 per cent. The 1928 production, which is shown by the first of the annual returns of the pulp and paper industries to the Bureau of the Census, exceeded that of 1927 by 4 per cent and that of 1925 by over 13 per cent. Newsprint production in the United States has declined steadily during the last four years and in 1929 was 17 per cent less than in 1926; at the same time imports from Canada have grown markedly and now greatly exceed domestic production. During 1929 paper prices showed relatively little fluctuation, but paper board, which was notably low in 1928, showed a distinct improvement.

Imports of paper base stocks were considerably larger in value than those of the previous year. Total imports of paper and paper base stocks were valued at $297,000,000, about 5 per cent more than in 1928, while exports of paper, exclusive of base stocks and printed matter, exceeded those of 1928 by 21 per cent. The value of books and printed matter exported increased nearly 12 per cent, while imports of similar products increased about 9 per cent.

Complaint Filed with I. C. C.—Complaint of "unreasonably and unjustly high" freight rates was filed August 29 before the Interstate Commerce Commission by the Public Utilities Commission of the State of Idaho, the Statesman Printing Company, and the Capital News Publishing Company against the Oregon Short Line Railroad Company, the Oregon-Washington Railroad & Navigation Company, Great Northern Railway Company, Northern Pacific Railway Company, Pacific and Idaho Northern Railway Company, Spokane International Railway Company, Longview, Portland and Northern Railway Company, Pacific Coast Railroad Company, (Washington), Spokane, Portland and Seattle Railway, Western Transportation Company, and Union Pacific Railroad Company.

The complaint sets forth that newsprint paper in substantial quantities is consumed by those engaged in the business of publishing newspapers in the State of Idaho at points along the line of the Oregon Short Line Railroad Company, and is shipped in Interstate Commerce from points in Oregon and Washington.

Paper Notes of Interest—A recent report from Consul Wm. E. Chapman, Cali, states that a moderate quantity of paper cups are being imported into the Cali consular district for use in soda fountains and the principal drug stores. The Consul believe the market for paper cups could be developed with the education of the Colombians to their use in public buildings and in commercial and industrial companies. The trade is at present about equally divided between the United States and Germany. Paper cups sell at local stores for about 2 pesos (approximately $2) per 100.

The Mexican Tariff Commission is studying ways and means of aiding the printing industry by reducing the rates of import duty on paper and other printing accessories and

by increasing the duty on imported books, periodicals and printed matter in general.

Observations on the preservation of newspaper records are made by the Bureau of Standards in a recent publication. Through a systematic survey of newspapers, the bureau finds that the records published between 1870 and 1927 will probably be totally lost unless preservative measures are undertaken. Prior to 1870 the papers composed variously of chemically-purified rag, wood, straw, and esparto grass fibers are generally in good condition, but papers since that period, which contain crude groundwood fiber, are generally in poor condition and after a few years usually crumble to pieces when handled. The resumption of the use of chemically-purified fibers, which was inaugurated for special permanent library editions in 1927, will probably maintain permanently newspaper records from that date. No means are known for making the newspapers published between 1870 and 1927 permanent, though their life may be prolonged by preservative measures such as covering them with Japanese tissue paper. The photostating of these records appears to be the most practicable way of preserving them.

1930 Commerce Yearbook—Volume I of the Commerce Yearbook for 1930, the eighth issue, has just been published. This book contains detailed information concerning business conditions in the United States and its noncontiguous territories and possessions. Volume I incorporates statistical information originally collected by numerous Government bureaus, trade associations, and trade journals. The statistics and data given in this work are invaluable, much of the material having been furnished for this book before being released for publication elsewhere.

❖ WISCONSIN ❖

Mills Concerned with Operating Economies

Expansion programs prevalent in Wisconsin paper mills a year or more ago have disappeared from the schedules for the time being until a more certain condition of business exists. It is known that these would have been quite extensive with some companies under normal conditions, but building operations have been curtailed and engineering and construction forces reduced so as to keep surpluses intact against any serious recession of business.

Despite this tendency towards caution, however, there has been no hesitancy in revamping departments of various mills so as to effect operating economies. When increasing production and strenuous competition caused the margin between costs and profits constantly to narrow down, mills began looking for opportunities to produce pulp and paper for less money so as to keep their earnings at a satisfactory level.

Cheaper power came in for the major attention for a long period. Boilers and turbines installed many years ago were found to be too costly to operate as compared to modern machinery and equipment for producing plant energy. A large number of mills, therefore, put up new boiler plants with boilers that produce more power with less fuel, and with automatic fueling devices so as to insure uniform firing with less manual labor. The Menasha Paper Corporation, Menasha, is completing a plant of this kind at the present time.

Now the wood rooms are the target for production economies. At the Consolidated Water Power and Paper Co., Wisconsin Rapids, the wood facilities at the Biron mill are being rebuilt. Two new American barking drums will replace the old equipment, enabling the company to accomplish in one eight-hour shift what formerly was done by three shifts in 24 hours. A main wood room 75 by 108 feet is under construction; also a wood storage room 27 by 56 feet. The plans also include a new conveyor room 12 by 119 feet. Winter and summer slashers also will be installed as well as a submerging conveyor operated in a hot pond so as to give the same bark softening facilities in the winter as in the summer. There will also be a new size plant, new deckers, a revamping of the deckering system, and changes in the white water layout. The new machinery is being used in the open until the old wood room has been dismantled. These improvements will be finished about Dec. 15.

New wood rooms also are being built by the Rhinelander Paper Co., Rhinelander, and the Thilmany Pulp and Paper Co., Kaukauna. The Rhinelander building will be much larger than the old one, giving a larger capacity. The contract has been awarded to C. R. Meyer & Sons Co. The Thilmany building will be 50 by 60 feetin size, and of brick construction.

New Company to Manufacture Transparent Paper

Wisconsin has a new industry known as the Transcello Paper Co., Milwaukee, located in a former warehouse of the Pfister & Vogel Leather Co., 710 West Virginia St. Its product is "Transcello," a transparent paper to be marketed at a price midway between that of glassine and cellophane. Two years were spent in experimentation and research to develop the product, and specially built machinery was evolved to produce it. The company occupies about 7,000 square feet of floor space and will have an initial output of 5,000 pounds daily. Canadian patents have been secured and application made for U. S. Patents.

Capitalization of the company is $100,000, consisting of 10,000 shares of common stock with a par value of $10. The stock is privately owned among men who have been identified with a carton business in the past. Officers are: J. E. Kiefer, president and general manager; John Orlebeke, vice-president, and Charles D. Rones, secretary-treasurer. Mrs. Nettie Karsten also is a stockholder and a member of the board of directors.

Following closely upon a building program in connection with its mills, the Consolidated Water Power and Paper Co., Wisconsin Rapids, has broken ground for a building 48 by 81 feet which will double its office facilities. The addition will be of sandstone to conform to the present office building, and will consist of one story and basement. The accounting and bookkeeping departments will be moved to this unit, and there will be a large stenographic room and six private offices.

Flambeau Not Satisfied with Riparian Valuation

Somewhat of a sensation was caused in paper mill circles when the Flambeau Paper Co., Park Falls, applied to the Wisconsin Railroad Commission recently for permission to erect a large dam on the Flambeau river through its subsidiary, the Flambeau Power Co. The permit was granted but carried with it a radical decision relating to the recapture clause of the state water power law.

Valuation of the power rights is fixed at the time the permit is granted, so if the state elects to take over the power dam at the end of 30 years under the recapture law, the amount of reimbursement to the owner will be understood. The company set up a claim for $151,850 as the amount justly due the company, including $67,748 for value of the flowage lands, rights and damsite, and $84,100 for the energy value. The commission reduced the valuation to the surprisingly low figure of $26,000, declaring that the energy which resides in falling water is not a property right appurtenant to riparian lands, but belongs to the state.

"The railroad commission has taken the position," says the decision, "that since the owner of a damsite and flowage rights on a navigable stream may not convert the energy of the stream to his own use without obtaining a permit from the state to do so, that therefore he has no property right in the mere energy of falling water. It is unthinkable that a man may have a property right in something he has not the legal right to reduce to his possession."

The Byllesby interests are backing the Flambeau company in a move to carry the decision through the state courts and the United States Supreme court to determine its validity. A precedent may be set for the entire U. S. with respect to recapture laws of various states.

Paper Mills Avoid Shutdowns Account Drouth

Shutdowns along the Wisconsin river due to the most severe drouth ever known during the last summer were avoided because of the foresight of paper manufacturers who in 1900 organized the Wisconsin Valley Improvement Company, took over a chain of dams built by lumber companies for the control of log flotation, and established reservoirs for the storage of water to meet any situation. By means of state legislation, the company established eminent domain and obtained power to assess yearly payments according to benefits received so the system could be maintained arbitrarily.

Lakes as far north as the Michigan line and reservoirs in marshy sections formed a vast storage with a two-fold purpose, the averting of floods, and the assurance of a uniform water flow for power purposes. This is the first time the system was put to a supreme test, and late in September the storage had been reduced to 8.7 per cent of capacity, with nine of the reservoirs completely dry. Fall rains began just in time to resume the water supply.

This company was conceived by Neal Brown, George A. Whiting, Walter and Lewis Alexander, R. B. Tweedy, A. H. Reid, B. R. Goggins and G. D. Jones. The company has its offices at Wausau, and has as its manager Warren E. Brooks, who, with the aid of state engineers, regulates the flow of water and the assessing of benefits to each paper mill utilizing the power.

Tariff News

Wisconsin Paper and Pulp Manufacturers Association is objecting to a complaint filed by the Northwest Paper Co., Cloquet, Minn., asking that freight rates on sulphur from Hoskins, Texas, be reduced from 52 cents to 47½ cents per 100 pounds. The Northwest company contends that the rate is prejudicial to Minnesota and favorable to Wisconsin. Objection is made because the result may be an order to increase all-rail rates to Wisconsin.

Opposition also has been voiced by Wisconsin mills, to a petition filed with the Interstate Commerce Commission by the Central Freight Association, asking increased rates on paper from the Fox River Valley to Iowa, Missouri, Nebraska, Kansas, Colorado and Oklahoma. The carriers want higher rates in lieu of granting a reduction on certain paper articles from the Miami Valley of Ohio in response to a demand from that source. Railroads contend that Fox River Valley rates are below a reasonable maximum and not a proper standard for gauging rates in the C. F. A. territory.

Protest also has been lodged with the I. C. C. from Wisconsin on the plea of eastern carriers that the commission reverse its decision so as to increase fifth class rates to 40 per cent of first class, and sixth class rates to 30 per cent of first class. Such action would mean an increase to paper mills here of 14 per cent in the former group, and 9 per cent in the latter.

Institute Officers Re-elected

One fellowship and 14 scholarships have been distributed among the college graduates who enrolled this fall in the Institute of Paper Chemistry of Lawrence college.

Officers of the institute were re-elected at a recent meeting of the trustees, as follows: President, Ernest Mahler, who is vice-president of the Kimberly-Clark Corporation; vice-president, D. Clark Everest, vice-president of Marathon Paper Mills Co.; secretary, Dr. Henry Merritt Wriston, president of Lawrence college; treasurer, Ralph J. Watts, Lawrence college; executive secretary, Westbrook Steele, of the college.

S. F. Shattuck, vice-president of the Kimberly-Clark Corporation, Neenah, is heading a new experiment at Lawrence College, Appleton, known as "a seminar on human relations." Group meetings of mill officials, faculty and students will be held to show whether there is a common interest between academic and industrial fields. The first discussion was on "Raw Materials in Employment," conducted by Mr. Shattuck. Others who will take part are H. G. Boon, superintendent; J. T. Eubank, engineer, and F. S. Martin, M. G. Hoyman and S. Robinson, of the educational staff of the Kimberly-Clark mills.

An extra dividend of $1 per share was declared recently by the Consolidated Water Power and Paper Co., Wisconsin Rapids. This is the third extra dividend this year, and gives the stockholders an earning of nine per cent instead of six per cent for the year.

Mrs. W. J. Peacock

Mrs. W. J. Peacock, wife of W. J. Peacock, personnel manager of the Northern Paper Mills, Green Bay, Wis., passed away suddenly September 5 at her home in Green Bay.

Mrs. Peacock is survived by the husband and two sons, F. Curtis Peacock of Albert Lea, Minn., and Morris B. Peacock of the Continental Paper Bag Co., Chicago.

Appropriations totaling $1,000,000 will be sought from the Wisconsin legislature next year for fighting forest fires. Losses during the intense dry spell this summer showed the need for adequate protection of the 14,000,000 acres of timber lands in the state. J. B. Nash, woods manager of the Nekoosa-Edwards Paper Co., has been named on a committee to promote improvement of fire prevention activities. One forest fire reached 500,000 feet of hemlock logs owned by the Wausau Paper Mills Co., Wausau, causing a loss of $10,000.

Most of the bricklaying is finished on the new building 110 by 200 feet in size to house the folding carton plant of the Ahdawagam Paper Products Co., Wisconsin Rapids. Color presses, cutting, creasing, gluing and folding machines are to be installed. James T. Mader will be production manager.

Extensive interests held by E. A. Oberweiser and the Whiting-Plover Paper Co., in the Whiting hotel, Stevens Point, have been sold to the Mid-West Hotel Co. Since the death of George A. Whiting, who was instrumental in establishing the hotel, it was decided not to continue these holdings further.

After a battle with the elements, the Newaygo Tug Line of the Consolidated Water Power & Paper Co. finally was able to bring into port at Ashland, the largest pulpwood raft ever towed across Lake Superior. The raft, containing 17,674 cords of pulpwood, got out of control of three tugs during a storm and was beached on Stockton Island, on the west shore. A large crew of skilled logsmen, rushed to the scene, was able to fasten the booms, and only 764 cords got away.

Honoring a full year of operation without a lost time accident, employees of the Badger-Globe mill of the Kimberly-Clark Corporation, Neenah, held a celebration recently when their delegates returned from the national safety conference at Pittsburgh, Pa., bringing with them the National Safety Council's trophy for first rank among mills employing 500 or more men. The workers met at the Neenah armory, where the trophy was exhibited and heard talks of commendation by company officials.

Safety competition is coming strongly from the mills of the Consolidated Water Power and Paper Co. at Biron and Appleton. The Biron mill has not had a lost time accident since Jan. 22, 1930, and the Interlake mill at Appleton since Feb. 16, 1930. Good records also were made by the mill at Wisconsin Rapids, but a recent lost time accident broke the continuity there.

Golfing skill of D. W. Bergstrom, Jr., vice-president of the Bergstrom Paper Co., Neenah, brought him the championship of the Neenah-Menasha Golf club. He defeated George Gilbert, vice-president of the Gilbert Paper Co., in the finals of the club tournament 4 and 3 in 36 holes.

PACIFIC COAST

WASHINGTON

A new power development in Alaska, sponsored by the Portland Canal Power Co., Seattle, of which W. T. Batchellar is president, is reported to be partially planned to serve paper mill plants in the territory. The project will involve about $2,000,000 with an initial capacity of 10,000 hp. and a future capacity of 20,000 hp. The hydroelectric generating plant will be located on the Alaska side of the Portland canal about 12 miles from Hyder, Alaska.

Olympic Forest Offers Gold Notes

Olympic Forest Products Co., with a new plant at Port Angeles, Wash., is offering through Blyth & Co., Inc., $750,000 in three-year 6 per cent gold notes dated September 1, 1930 and due September 1, 1933. The company was incorporated January 25, 1930, under the laws of the State of Nevada. Capitalization is given as $1,250,000 authorized gold notes with $750,000 outstanding; 40,000 shares preferred stock, these outstanding; 110,588 shares authorized common stock with 94,118 outstanding.

The company's new 175-ton sulphite mill at Port Angeles, was completed a few weeks ago and put into operation. E. M. Mills, San Francisco, is president of the Company. Other members of the board of directors include J. D. Zellerbach, San Francisco; Joseph Warren, Boston; Clyde B. Morgan, Boston, and William E. Boeing and Elmer E. Todd, Seattle. Other important stockholders are Robert Polson and Polson Logging company; Thomas D. Merrill, Joseph Irving, M. A. Arnold, R. D. Merrill, Mark E. Reed and J. H. Bloedel.

The Olympic Forest Products plant has the first Minton Vacuum Dryer installed on the west coast. The machine contains 40 dryers, five-foot diameter, with a face of 152 inches and is designed to produce 175 tons per day of over 100 per cent air dry bleached pulp.

Another distinctive point in the Port Angeles mill is the installation of the first chemipulp process on the west coast.

In the announcement concerning the bond issue Mr. Mills summarizes the facilities and properties of the company, among which are 160 acres owned on tidewater where the plant is located, including a sawmill with an eight hour shift capacity of 175,000 feet. The timber supply is assured by long term contracts with the Crescent Logging Co. and the Merrill & Ring Lumber Co., and all provisions for obtaining a high quality of material at low cost have been considered.

CALIFORNIA

J. D. Zellerbach, executive vice-president of the Crown-Zellerbach Corp., has been elected to membership of the directorate of the Wells Fargo Bank & Union Trust Co., San Francisco, succeeding the late John I. Walter. Mr. Zellerbach is vice-president of the Rainier Pulp & Paper Co., the Washington Pulp & Paper Corp. and Northwestern Light & Power Co., and is president of the National Paper Products Co. and the Fibreboard Products Co.

Buckley-Lynch Paper Company, Ltd., is a new firm organized in Los Angeles to handle a general line of printing papers, with offices at 541 Petroleum Securities Building and warehouse stocks at 434 South San Pedro. The company is composed of Emmett Buckley, formerly manager of the General Paper Co. and Charles Lynch, former greeting card manufacturer. Ross McPhee, former city sales manager for Zellerbach Paper Co. in Los Angeles but more recently operating his own paper distributing company, also has connections with Buckley-Lynch Paper Co., Ltd.

The Southern Paper Products Corp. has recently been organized in Los Angeles by Harry L. Dunn, president, South Pasadena, and Frederick N. Edwards and Geo. H. Woods, Los Angeles. The capital stock is given as $1,500,000 and the company is said to be planning a mill enterprise in the near future for the manufacture of paper lines of several kinds. Representatives of the company are O'Melveny, Tuller & Myers, attorneys of Los Angeles.

Government Representatives File Report on Alaska

B. F. Heintzlemann of the United States Forest Service and J. C. Dort, government representative from Washington, D. C., have been in San Francisco, following a trip to Alaska, where they checked on final applications for permits made early in the summer for hydroelectric projects in which Cameron interests and Zellerbachs are separately concerned.

The two government representatives conferred with officials in San Francisco and have now arrived at Washington where their report has been filed and from which place an early decision is expected. It is said that if the report from Washington is favorable some work may be started in the Alaskan district yet this year.

C. F. Beyerl, who resigned as president of the Western Paper Converting Co., Salem, Oregon, several months ago because of ill health and who has been traveling in California, has gone north to do some consultant work at the Crown-Willamette Paper Company's plant at Camas, Wash.

The plant of the Pacific Coast Pulp & Paper Co. at Richvale, which will have a 35-ton capacity to manufacture paper from rice straw, will get into operation shortly after the first of the year. C. A. Kieren is supervising construction which is proceeding under contract of the American Engineering Corporation.

The George & Sherrard Paper Co., Wellsburg, W. Va., affiliated with the International Paper Co., New York, is said to be considering the construction of a new mill on the Pacific coast in the vicinity of Los Angeles, for the production of multi-wall paper valve bags for cement, plaster, etc. Report states that the mill will be of extensive proportions to meet all the requirements of the Pacific coast trade. W. S. Weaver is representative of the company with offices at 307 Third street.

OREGON

Hawley Co. Reports Satisfactory Earnings

Officials of the Hawley Pulp & Paper Co., whose mill is at Oregon City, announced on September 30 that earnings of the company in the last four months have been more than the preferred dividend requirements for the entire year. Statement was also made that the company was not alarmed regarding the recent Pacific coast newsprint price reduction, since only a small percentage of the total output of this plant is affected.

Hawley Pulp & Paper Co. in the past few years have disposed of considerable tonnage that involved a long freight haul and it is the hope of the mill to replace this in part with Pacific coast tonnage.

Forester Addresses National Association

C. P. Wilbur, president of the Association of State Forests, was a principal speaker at the eleventh annual convention of the National Association of State Foresters which convened in Portland October 1. Delegates from 22 states were present at the first session and others were registered later. Governor Norblad and Mayor Baker of Portland extended welcome on behalf of the state and the city.

Discussing the great problem of forest depletion, Mr. Wilbur stated that it is necessary that radical changes be made in the taxation systems in various states, although these revisions wait tentatively on a national survey of forest land taxation, which survey will soon be completed.

"When the survey is completed," said Mr. Wilbur, "we

can proceed in development of a tax system that will encourage timber growing and place it on an actual crop basis. There is no question but that the annual tax on timber must be eliminated for it is so heavy as to incur impossible burdens on owners."

Mr. Wilbur further stated that owners were now cutting timber and glutting the market, in addition to destroying timber resources because under present conditions owners will not reforest their land. However, if taxation can be reduced then timber enough to supply the needs of the United States both for present and future supply will be made available. Much of the marginal farm land will be planted in forests and the agricultural situation will feel a favorable reaction. But if the taxation problem is not improved speedily there is going to be an acute shortage of wood for production uses, Mr. Wilbur declares.

Washington and Oregon joined in acting as hosts for the delegates who after the first day's session in Portland proceeded to Longview, Wash., from which point they went on to Seattle and other Washington points, disbanding October 5. Lynn F. Cronmiller, Oregon state forester, Ben E. Bush, Idaho forester, and George S. Joy, Washington forester, were prominent on the entertainment committee. Field trips and airplane surveys were included in the program of the four days' convention, and trips through the principal mills using lumber products or manufacturing lumber.

Paper Makers Chemical Corporation's New Plant

In September, 1929, the Austin Company started construction of the new plant of the Paper Makers Chemical Corporation, Portland, Ore., and early in January, 1930, the plant began operation. This was the twentieth plant to be established by the company whose headquarters are in Kalamazoo, Mich., with W. J. Lawrence president and general manager.

Plans for this plant were drawn by H. A. Stunkard, plant engineer for the company who supervised the construction, but whose headquarters as consulting engineer for the Paper Makers Chemical corporation are in Atlanta, Ga., Incidentally, the rosin which is used in large quantities for the rosin size which is one of the main outputs of the Portland plant, comes from Georgia through the Canal.

The company's producing area is the Suwannee Forests in southern Georgia, where large flows of rosin are secured from the southern pine.

The Paper Makers Chemical Corporation maintains a policy of locating its plants to serve the territory nearest to a new market. The Portland plant not only had possibilities for a wider market in the west coast districts where the company had been shipping its products to paper mills for a number of years, but the prospects for developing the far east trade in China and Japan were considered in locating this latest plant of the company,

Plants of the company are located in many sections of the United States and in Ontario, Canada, and London, England, and shipments are made to many world ports. Although chemicals used specifically in the paper industry constitute the basic output of the plant, other chemical products will be added when the market justifies.

The main building of the Portland plant is approximately 60x160 feet, one section being two-story. The office, warehouse and main laboratory are housed in this building. The power house is 250 feet distant. The grounds of the company are now in process of landscaping and a very beautiful lawn and drive will be completed before another season.

Operation of the new plant and also supervision of sales is under the direction of Alec C. Duncan, who has been representative in the northwest for sometime calling on mill executives and is one of the oldest in time of service, of salesmen employed by the company.

J. V. B. Cox, formerly of the main laboratories of the Paper Makers Chemical Corporation, Kalamazoo, is superintendent of the Portland plant and in charge of chemical and technical work.

Paper Converting Co. Has Increase in Business

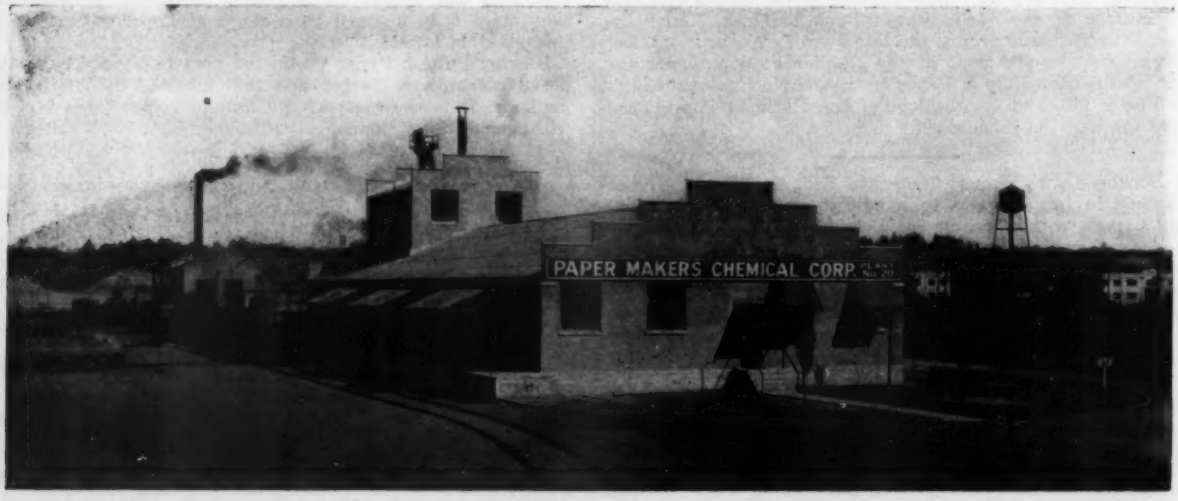
Lloyd Riches, sales manager for the Western Paper Converting Co., Salem, says that the company's export business is growing and that sales this year show a nice increase over last year. The company specializes in stationery for schools, accessories for fruit packers, adding machine paper, glassine bags, fancy wrapping paper for ice cream and candy bars, and a pure aluminum foil for wrapping purposes that is a substitute for tinfoil.

Western Paper Converting Co. is now contemplating a plant expansion in the not distant future.

The Fir-Tex Insulating Board Co., which recently completed a $2,500,000 plant at St. Helens, has now opened a display and sales-room in Portland, having taken space in the Paramount theater building on Broadway under a three-year lease. An aggressive sale campaign is already under way and the new rooms are being remodeled to meet the greatest convenience of the management.

Joe Kaster, prominent in paper mill circles of the northwest, and particularly in Salem at present, is interested in a new fiber plant project for Brownsville, of which company he will be vice-president and general manager. The concern plans to manufacture excelsior from straw. A site has already been purchased.

The Independent Paper Stock Co., Portland, has a program of improvements under way in its storage and distributing headquarters. F. H. Neville is manager.



ADVERTISING PAGES REMOVED

MICHIGAN

Paper Technologists Elect Officers

The annual election of officers was the principal order of business at the monthly meeting of the Technologists Club of Kalamazoo on September 10.

After a sumptuous dinner at the Columbia hotel, the election was first taken care of, resulting in the promotion of Max Bardeen, of the Lee Paper Co., from vice-president to president. Kent Kidder, of Allied Paper Mills, who has served so capably as secretary during the past year, was made vice-president, and Harold Miller, of the Paper Makers Chemical Corp., was elected secretary. Frank Whittington, who has had charge of program arrangements since the inception of the club three years ago, was asked to again resume charge.

Max Bardeen, Frank Libby and Frank Whittington, who attended the Fall Meeting of T.A.P.P.I. at Erie, Pa., gave quite complete reports and presented to the members a picture of the meeting as a whole including the boat trip to Port Dover and how John Barleycorn missed the boat coming back.

During the dinner, slips were passed out and each one wrote down a question on some problem that he had not been able to solve. After the convention reports, these slips were shaken up and drawn; each one being required to give a two-minute talk on the subject drawn. A great deal of valuable discussion on practical mill problems resulted from this impromptu speech making.

At the next meeting of the club, October 8, the members will be guests of the Kalbfleisch Corp. of Kalamazoo. V. G. Heinmuller, chemist of the corporation, will speak on acids, their manufacture and uses, and Mr. Heller, of Paper Makers Chemical Corp., will speak on the value and use of a reference library.

Cost and Technical Ass'n Plays Golf Finals

The regular September meeting of the Cost and Technical Association of the Kalamazoo Valley was held at the Columbia hotel the evening of the 24th.

During the summer a golf tournament has been in progress and the finals were played off in the afternoon before this meeting.

Following the dinner, prizes were awarded on basis of a blind bogey. The prizes were donated by Edgar Brothers Co. and were distributed as follows: First, Arthur Cole, of Rex Paper Co., a $40 golf bag; second, Glen Ingling, of Kalamazoo Paper Co., an order for a pair of golf shoes; Harry Bradford, Rex Paper Co., H. S. Farum, Watervliet Paper Co. and Paul Torre, Michigan Paper Co., three golf balls each. Severens Balch, who played the 18 holes in 85 was awarded three balls for low gross, and Frank Whittington, who says he gets lots more exercise for his money, was awarded, for his high gross, a book on "How to Play Golf."

Following the festivities in connection with golf awards, Olin Callighan, of Edgar Brothers, exhibited two reels of motion pictures and explained the mining and processing of the fine grade of clay produced by this concern. Among the questions asked was the query as to why cars sometimes varied in bulk, to which the speaker replied that at present they are unable to control the moisture to an exact per cent and that a difference of one or two per cent of water will show appreciably in the bulk of the clay. Work is being done to effect a closer control of moisture.

Raymond A. Kelly, an employee at the Bryant Paper Co., Kalamazoo, was fatally injured when he became caught in a paper winder at the Milham division of the company.

Ray Barton, for the past nine years a paper chemist for the Groveton Paper Co., Inc., Groveton, N. H., has taken over the supervision of the technical work in the plants of the Michigan Paper Co. at Plainwell and Kalamazoo.

Studebaker Engineer Addresses Kalamazoo Club

The Engineers Club of Kalamazoo enjoyed a profitable evening at its regular monthly meeting, held at the Columbia hotel, October 1.

Mr. Tobey, chief engineer of power, for the Studebaker Corporation, of South Bend, Ind., was the speaker of the evening.

The Studebaker Corp. enjoys the unenviable reputation of having worked from what was probably the worst boiler condition in the country to one of the best.

We say unenviable because, even though they now have exceptionally good boilers, who envies them the experiences they went through before attaining their goal?

Mr. Tobey explained briefly the conditions existing at the time he was thrust into the position he now holds.

Tubes were being replaced continuously and turbines had to be torn down every month for cleaning and replacement of blades. With four turbines in the plant, five were cleaned in one month. Steam traps were being clogged up faster than a special crew of men could clean them out.

Conditions were terrible and those were hectic days for the engine and boiler room crews.

Obviously, the water was the cause of all the trouble, therefore, a systematic series of tests were made to try and determine the why and wherefore of the water condition. The water was being treated by a hot process much too small for the plant and the first investigation was to determine the rate of flow through the filtration bed. Turkey red oil was added to the water in the heater and the time taken for it to emerge from the filter. Where the time should have been one and one-half hours to allow for reaction and separation, the actual time consumed was only three minutes. The treatment was naturally proving ineffective and was being completed inside the boiler where a large amount of sludge would be precipitated.

The method of treatment was changed to a chemical which would give soluble compounds for the resulting combinations of the calcium and magnesium salts. The chemical is fed into the feed water line by an automatic proportioning device, and a bleeder is inserted into the top drum to the center of the drum from where a blow is taken twice each shift so as to maintain a constant concentration.

After changing the chemical treatment, a series of samples were taken to study the effect of increasing concentration. Samples were taken from five points in the boiler every hour and the concentration was raised from zero to 1,000 grains per gallon over a period of five days when a half inch bleeder from the top drum was opened and the concentration dropped to around a 100 grains per gallon over night.

As a result of the above test, it was established that the concentration in a boiler is quite uniform except right next to the front bank of tubes at the top of the mud drum, therefore deconcentration can be accomplished by bleeding from any part of the boiler except right in front of the feed pan.

To determine the most satisfactory concentration for continuous operation, two boilers were thoroughly cleaned and refilled. One was operated at a constant concentration of 80 grains per gallon and the other at 500 grains per gallon. At the end of two weeks' operation the former was the dirtiest. Following this test, all boilers were run at 800 grains per gallons for eight months when it was found that a very thin hard sulphite scale was forming.

Another series of tests run to try and establish the correct concentration were carried out on one boiler and the amount of chemical was kept constant and the boiler rating was kept constant. Tests were made for concentration and Calcium Sulphite. Results—up to a concentration of 15 the $Ca\ SO_4$ gradually increased, then from 15 to 26 it dropped off to a minimum at 26 after which it increased again. This established the point at which least sulphate scale would be deposited, so now boilers are operated at a concentration between 22 and 32 which represents 450 to 600 grains per gallon.

Discussion and questions brought out the fact that the plant operates at 210 pounds steam pressure.

ALL your mechanical equipment needs the kind of protection that Hyatt Roller Bearings afford.

Longer bearing life, smoother operation, capacity to withstand punishment and unusual strains, freedom from constant oiling, adjustments, and shut downs for bearing repairs — these are the advantages of Hyatt protection.

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HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

Part of the chemical for treatment is put into the spray pond and about 75 per cent directly into the boiler.

The bleeder takes out approximately 3 to 3½ per cent of the boiler makeup.

The bleeder pipe is 3/8-inch and lays on the bottom on the top drum to the center where it turns up to a point 2 feet from the bottom.

Water circulation does not go up one bank and down the next then up the third but is up and down within the bank itself and is crosswise in the drums.

Furnace temperatures at the Studebaker plant are 3100 degrees F. and underfeed stokers are used. The stack temperature runs 540 degrees at 200 per cent of rating.

Paul Torre Joins Staley Organization

Paul Torre, who left the Dunn Sulphite Paper Co., Port Huron, Mich., in May, 1929, to become affiliated with the Michigan Paper Co., Plainwell, Mich., is severing his connection to take charge of the paper mill department in the extensive research laboratories of the A. E. Staley Mfg. Co., Decatur, Ill.

Mr. Torre has had considerable mill experience on papers using starch and other adhesive fillers. His friends are expressing regret at his leaving, but are congratulating him on the opportunities which the new position should offer.

❖ NORTHERN NEW YORK ❖

Eastman Kodak Contracts for New Machine

Bagley & Sewall Co., of Watertown, has just been awarded a contract for a papermaking machine to be completed this year by Eastman Kodak Co., of Rochester, largest camera and photographic supply manufacturing corporation in the world. The machine will be for installation in the kodak company's own mill and will be of the most modern type in every way. It will have the utmost speed consistent with the grade of paper to be manufactured and will be devised to make the finest quality of that particular grade. It is understood it will be 100 inches in width. Delivery is to be made before the close of the year and construction will be started in the Watertown plant at once.

Eastman Kodak Co. is a large user of paper annually. Hundreds of thousands of tons of various grades are used, and in the past a large amount of this has been purchased under contract from paper companies.

Bagley & Sewall Co. has also started the construction of an addition to its store house at the Sewall Island plant in Watertown. The new building will be 45 by 100 feet and will be of fireproof construction.

New Machine Increases Coty Production

The Coty Bag Corporation, of Watertown, during the past few weeks has begun heavy production of all kinds of paper sacks on its recently completed machine which does three operations in one at speeds several times greater than the average separate-process machines usually operate. This large machine cuts labor and overhead down to one-fifteenth of the average cost of the separate-process method, according to Coty officials. This new machine is the exclusive possession of the Coty Bag Corporation. In an effort to catch up with production the bag corporation is working nights.

A second complete machine is being built and is now about half completed. Upon completion, the production capacity will be doubled, which will require a daily turnover of 15 to 40 tons of paper per day, depending upon the size of bags manufactured. The bags are all open-mouth sacks and on this new machine can be produced in single, double or triple ply, without extra manufacturing cost, a valuable feature inasmuch as duplex and triplex bags sell at a higher price. According to the bag corporation, within a few years at least 15 of these large machines will be in operation in the local plant. It is expected that they will also be placed in the leading foreign factories on a royalty basis. The machine is protected by patents in the United States and all economically-important foreign countries.

The St. Regis Paper Co. has declared the regular quarterly dividend of $1.75 a share on its preferred stock and 25 cents a share on its common stock, both payable Oct. 1, 1930, to stockholders of record, Sept. 10.

F. A. Helin, a draughtsman employed by the Bagley & Sewall Co., of Watertown, has been awarded a patent by the United States patent office for his invention of a new papermaking machine. He applied for the grant March 8, 1929, and has assigned his rights to Bagley & Sewall. The invention is made up of 14 patentable features.

Six Russians, representatives of the Soviet government, arrived in Watertown the latter part of September to study methods of manufacturing Fourdrinier papermaking machines at the Bagley & Sewall Co. plant. These men who comprise the second party of Russians sent to Watertown to visit the Bagley & Sewall plant this year, will familiarize themselves with the construction of a large machine which the Watertown firm is building for use in a Soviet government mill on the Volga River. The men also have paid several visits to the plant of the Coty Bag Corp. at Watertown. All six are young men, one an engineer and the other five skilled mechanics. The engineer, S. A. Spirvous, speaks English fairly well and acts as interpreter for the other men.

St. Lawrence University Offers Forestry Course

St. Lawrence University at Canton has added a forestry course to its curriculum according to an announcement by Dr. Richard Eddy Sykes, president of the university. The university forestry department, under Prof. Floyd Callward, also intends to undertake extensive reforestation projects. During the past year over one million trees have been planted by the university in various sections of Northern New York.

The forestry department has appointed Ralph G. Unger of Hudson, N. Y., as associate forester with headquarters in Malone. Mr. Unger, a graduate of the New York State College of Forestry at Syracuse University, will work with the officials of Franklin and Clinton counties in the promotion of reforestation, in accordance with the provisions of the Hewitt bill, granting state aid to counties for forestry work. Mr. Unger's employment is in furtherance of the extension policy of the university forestry department.

An improved process of making pulp from yellow birch wood has been worked out at the New York State College of Forestry at Syracuse university, according to an announcement just made. The investigation carried on at the college covered the conversion of yellow birch into paper pulp by using liquid chlorine as a pulping agent. The investigators found that the birch wood when pulped by this process gave a product four times as strong as when pulped by the usual soda process commonly employed in the conversion of hard woods. In addition to the factor of extraordinary strength it was found that the fibers were more flexible and bleached with much less difficulty than the ordinary soda wood pulp from the same wood. The process has good commercial possibilities although certain economic phases remain to be worked out.

The Steamer John H. Price of the Hall Fleet of Ogdensburg recently ran aground in the St. Lawrence river near Morrisburg, Ont. while loaded with pulpwood for the Algonquin Paper Co. mill, at Ogdensburg. The Price's sister ship, Rockcliffe Hall, was just leaving Waddington after discharging pulpwood at the St. Regis Paper Co.'s terminal and offered assistance. After 100 cords had been transferred to the Rockcliffe Hall, the John H. Price was refloated and proceeded to Ogdensburg.

Frank A. Augsbury, president of the Algonquin Paper Corp., of Ogdensburg recently returned from Mont Louis

3 TESTS FOR EVERY NORDSTROM VALVE.

Nordstrom Valves will withstand pressures **double** the rated cold working pressure because they are subjected to a hydrostatic test of such severity in the factory.

A primary air test at 75 pounds air pressure discovers any porosity of the body castings. A secondary air test at 150 to 250 pounds air pressure indicates any leakage when the valve is completely assembled.

Thus every Nordstrom Valve must pass severe requirements far in excess of those actually met in operation. This is **your** guarantee of most efficient valve service and long life.

Nordstrom Valves are leak-resistant and always easy to turn because sealed and lubricated by the patented "Sealdport" method of lubrication, which employs hydraulic pressure and special "Merco" Lubricants.

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For best valve service, use "Merco" Lubricants. For a permanent seal in screw thread and gasketed joints, use "Merco" Pipe Compound.

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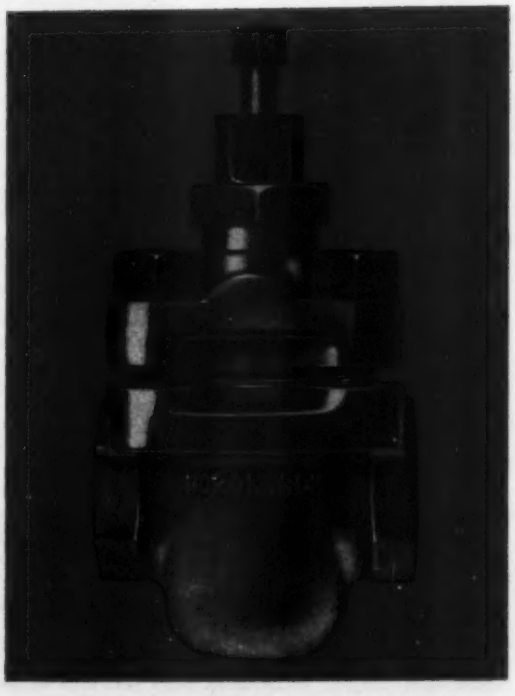

Nordstrom Valve with "Sealdport" method of lubrication.

THE PERFECT APPLICATION OF A PRINCIPLE

where he inspected the pulpwood terminal and power plant being built there at a cost of $100,000. Mr. Augsbury was accompanied by his brother, John C. Augsbury.

Northern New York paper mill executives carry large life insurance policies, according to the "Prominent Patrons" number of **The Spectator**, insurance magazine just issued. Samuel A. Upham, president of the Brownville Paper Co., leads the list with a $160,000 policy; Carl B. Martin, treasurer of the St. Regis Paper Co., carries $141,000; David M. Anderson, vice-president of the St. Regis Paper Co., $132,000, and John J. Warren, president of the Harmon Paper Co., of Brownville, $125,000.

Fred L. Becker

Fred L. Becker, assistant sales manager of the Continental Paper and Bag Company passed away at the Mount Vernon Hospital, Mount Vernon, N. Y., on Thursday, September 18.

Mr. Becker had been manager of the Cleveland office of the Continental Paper and Bag Company before coming to New York four years ago. He was a native of Cleveland and had been connected with the Continental Paper and Bag Company for a period of 20 years.

◆ NEW YORK CITY ◆

Arthur Holbrook Named Manager

Announcement is made that Arthur H. Holbrook, formerly secretary of the English China Clay Sales Corporation, of New York, has been elected vice-president and American manager of the company, succeeding Sigmund Goldman, deceased. Mr. Holbrook has directed the American company since the death of Mr. Goldman some weeks ago. D. E. Milne, who has been with the company for ten years, becomes secretary in place of Mr. Holbrook, and H. M. Gillespie, who has been with the company since the American offices were established, has been named treasurer.

The elevation of Mr. Holbrook to this position of responsibility will be greeted with pleasure by a host of friends in the paper industry. Mr. Holbrook will continue to maintain his personal office at 10 High street, Boston. The New York headquarters of the company will remain at 551 Fifth avenue.

Frederick H. Chase, for many years president of Chase & Norton, Inc., and for the last seven years with Daniel M. Hicks, Inc., has sent out cards announcing to his customers and friends in the waste paper and paper mill supplies trade that he has again gone into business for himself at 518 Water street, New York, specializing in the various grades of waste paper which he has handled for many years.

The Gatti Paper Stock Corporation, with main offices at 122 East Forty-second street, New York, and warehouses and packing plants in Hoboken, N. J., and Boston and Holyoke, Mass., has filed notice of an increase in capital from $200,000 to $1,150,000.

The Champagne Paper Corp., of New York City, has been incorporated under New York State laws with a capital of $20,000 to deal in paper and paper products. The new corporation is represented by Limburg, Riegelman, Hirsch & Hess, of 160 Broadway, New York.

The United Paperboard Company, Inc., with headquarters in New York City, reports for the fiscal year ended May 31, 1930, a net profit of $3,115 after expenses, depreciation, etc., equal to 23 cents a share on 1,317,200 preferred six per cent shares, compared with a net loss of $104,695 during the year ended May 25, 1929. On gross sales of $7,655,282 for the 1930 fiscal year, gross earnings were $376,476, while $275,000 was written off for depreciation. The company is reported to be arranging for the early resumption of operations at its Hanover paperboard mill in Whippany, N. J., giving employment to about 80 men. The plant has been closed since June.

Harry L. Derby, president of the Kalbfleisch Corporation, of New York, chemical manufacturers, and a member of the National Association of Manufacturers for many years, has been renominated as vice-president of the association for New York. The election will take place at the Roosevelt hotel in New York, October 6, at the annual meeting.

General Electric Introduces New Mechanical-Drive Turbine

A new small mechanical-drive noncondensing steam turbine for driving centrifugal pumps, fans and similar industrial equipment operating in general at speeds between 1,750 and 3,600 r.p.m. has been announced by the General Electric Company and will be exhibited for the first time at the International Petroleum Exposition to be held in Tulsa, October 4.

The new turbine is built only as a single-stage machine and has two rows of revolving buckets. It follows the design of the standard line of G. E. mechanical-drive turbines and although simple in construction embodies dependability and reliability. The wheel casing is split horizontally for easy access to the internal parts, and the steam and exhaust pipes are connected to the lower half of the machine. A new centrifugal governor with weights pivoting on knife edges operates with very little friction and provides proper speed regulation. An independent emergency governor is included.

Crane Perpetuates Its Anniversary

To permanently commemorate its seventy-fifth anniversary, Crane Co. has selected sculptured bronze tablets and medals.

One hundred thousand medals and 300 16-inch plaques bearing the founder's portrait, were ordered, the medals distributed to customers in all parts of the world, the plaques erected for permanent display in Crane Co. branch offices and display rooms. Ten tons of special formula bronze were required for the work. John R. Sinnock, sculptor at the United States mint, prepared the models in 16-inch size which were reduced on the Janvier machine in the Medallic Art Company plant at 210 East Fifty-first street, where the medals were designed and reproduced.

C. R. Crane, II, vice-president Crane Co., took a personal interest in the progress of the work and expressed himself as well pleased with the faithful reproduction of R. T. Crane, his grandfather and founder of the company.

Permutit Now Manufacturing Zeolite

The Paige and Jones Chemical Company announces that it has sold to The Permutit Company the zeolite and lime soda water softening and filter departments of its business including machinery, inventories, patterns and drawings relating thereto. It has been manufacturing zeolite water softening apparatus as licensee under The Permutit Company's patents.

The Permutit Company with its large engineering staff will be in position to furnish repair parts and replacements for Paige-Jones mechanical equipment now in use. The Paige and Jones Chemical Company will continue the chemical branch of its business in which it has held a prominent position for the past 16 years.

In connection with current operations of Dominion Engineering Works, Montreal, it is understood that the steady increase in the number of newsprint and hydraulic installations which the company has carried out in the past few years is resulting in an increased source of earnings, owing to maintenance and general repair work.

Timken Heavy-Duty Mill Type Quad Bearings 29½" Bore, 46½" outside diameter, 29" width. Capacity 7,000,000 pounds.

Timken Bearings *are* Licking *the* Toughest Jobs *in* Industry—Hence *their* Vital Necessity *in* Paper Mill Machinery

Sweeping on and up with an irresistible rush, Timken Bearings soar to greater and greater heights of achievement as they are pitted against the toughest jobs that Industry can produce . . . upsetting all pre-conceived ideas of production and production costs—revolutionizing anti-friction requirements . . . brushing aside old theories and traditions to make way for new standards of anti-friction efficiency, economy and endurance.

Terrific pressure loads such as are met in steel rolling mill service—as high as 7,000,000 pounds, are being carried by Timken Bearings in many of the country's largest steel plants.

Hair-breadth accuracy such as is demanded by the finest precision machine tool work is maintained as a matter of regular daily routine.

And thrust and speed and weight and shock—no matter how severe, are handled with equal capability and sureness whether encountered in such widely different types of heavy duty service as automobile operation, paper-mills, transcontinental limited trains, oil field equipment or any kind of machinery.

Wherever wheels and shafts turn, "Timken Bearing Equipped" is the modern symbol of protection and saving.

You need and should demand Timken benefits in jordan engines, pulp shredders, chip screens, driers, paper machines, fourdriniers and all other equipment you buy. The Timken Roller Bearing Company, Canton, Ohio.

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POWER

GENERATION - UTILIZATION - MAINTENANCE

By W. S. JOULE

This section turns the searchlight upon power and its allied problems. It shows up big possibilities to save. Opportunities to improve conditions, methods, apparatus will be discovered. Worth while practices suggest new ideas and wider usages of equipment.

Sealing Up Furnace Leaks

ALL brickwork is porous and all furnaces will "breathe" with changing temperatures. The only way to prevent this sort of air infiltration is to cover the brickwork with one or more coatings of boiler compound which is an impervious, plastic material which drys rapidly but which will seal up all interstices, crevices and cracks on the surface of the brickwork.

The application of a high-grade furnace plastic will cut the fuel bill anywhere from 3 to 15 per cent by cutting off the air infiltration through the brickwork. This saving alone, justifies the use of plastic material, of course.

Other advantages are that the entry of cold air is prevented, combustion is more complete, and in consequence there is less tendency for smoke to occur. Boiler capacity is increased due to the elimination of air infiltration and excess air. Where stack capacity imposes the limitations to boiler output, the furnace plastic is a big factor in increasing stack capacity, since it reduces excess air.

The majority of factors contributing to boiler room economy require incessant and tireless watching. The opposite is the case with a boiler setting plastic, since once installed it "stays put" without any attention for many months—so long as heat is, therefore, a very high-yield investment.

A shovelful of coal will about pay the cost of covering one square foot of brickwork. An aluminum paint has now been developed which can be applied to this plastic material so that instead of the boiler room looking dirty and dark it will look spick and span and bright.

Causes of Rubbing Turbine Blades

RUBBING of turbine blades is an occurrence to be guarded against at all times because of the small clearances employed. Serious damage may be done, if this condition exists for any length of time before being discovered.

Rubbing of blades may be caused either by rubbing against the stationary element or by the stationary blades rubbing the shaft. The former is known as a "cylinder rub," the latter as the "spindle rub," to use the parlance of the turbine erector.

Unless quickly prevented by shutting down the turbine, serious damage may be done, becoming worse and worse until blades strip or become dislodged and wedged between stationary and revolving elements. When this happens, considerable stripping may occur; frequently the shaft becomes out of alignment.

Making Governor Handwheels More Visible

MANY hydroelectric stations cover considerable floor space due to the arrangement of penstocks and the large size of the water-wheels. Consequently, it is often difficult to see down the floor so that each unit is visible, when standing upon the operating gallery. Because of the dark gray or green so often employed for painting water-wheels, housings and generators, plus the fact of the distance involved, it is very difficult to see what's doing at the end of the floor.

So long as the station operator has his electrical instruments on the switchboard, he does not need to see much on the generator floor other than the operation of the turbine governors or the handwheels or the operation of the gates controlling the water supply. When the operator operates the electrically-operated governor of any turbine, he always wants to make sure that it is operating properly so that he can govern himself accordingly. The usual practice in such cases is to watch the operation of the handwheel so as to see if it is turning when the control switch is closed, so varying the load on the machine.

To overcome the haze, the distance and the dark background, some companies paint the handwheels, so that they stand out from the drab background. The thought that first comes to mind in connection with this is the use of white lead. Unfortunately, white lead soon becomes discolored, due to the presence of oil and dirt. A much better coating is obtained by the use of yellow enamel, using a bright vivid yellow such as is used for safety lines on highways to guide automobile drivers. By applying this in the form of stripes, the handwheels can easily be seen. Oil and dirt can be easily wiped off and the coating is permanent.

Trouble and Expense Are By-Products of Dirty Steam

IMPURE water fed to the boiler or excessive water treatment are the two chief causes of dirty steam. The effects of dirty steam are magnified when a high water level is carried and, of course, when priming occurs.

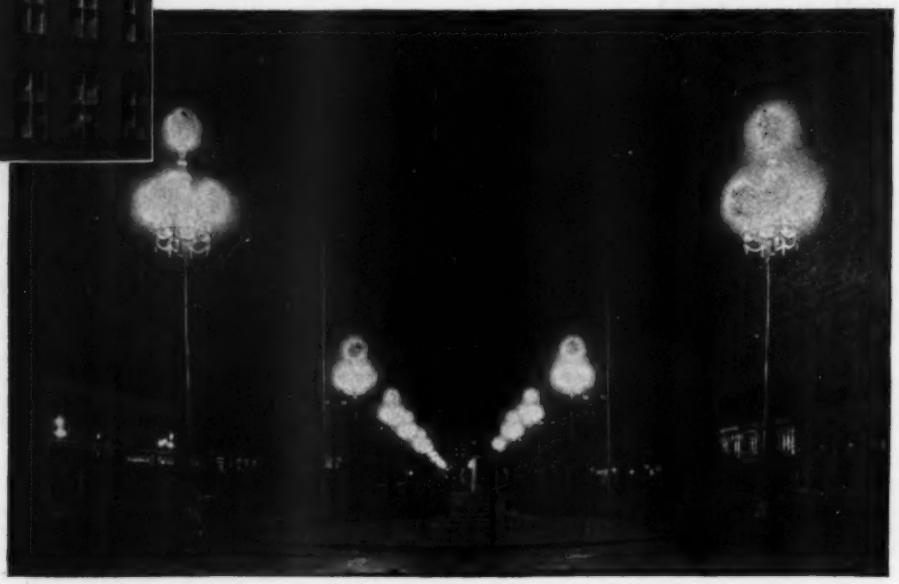
An examination of steam traps and separators, when made analytically, gives a good idea of the amount of dirt carried over with the steam. It should be borne in mind, however, that much of the dirt is missed and that it passes along into the steam line, through the prime movers, etc. The amount of dirt is always very much greater than supposed because it is so widely scattered and distributed. It quickly accumulates, therefore, in those places which are not accessible to inspection and cleaning.

Foreign matter carried over with the steam precipitates on superheater surfaces, clogging them and often becoming corrosive in the presence of moisture. It tends to reduce the degree of superheat because the layer of scale caused by the precipitate interferes with heat transfer of the superheater. If this dirt reaches the turbine it clogs the blading, brings about rapid erosion or attrition and reduces the efficiency of the unit, including both blading and nozzles. With reciprocating engines it causes scoring and cutting, causes lubricant trouble, necessitates more frequent filtering or cleaning of the oil, and increases the wear of the packing and often collects around it, building up a mass that is objectionable.

When the dirt reaches the condenser it covers the tubes interfering with heat transfer, necessitating increased power consumption in the effort to keep up the vacuum or causes loss of thermal efficiency through lower vacuum. It also increases maintenance costs. Valves become clogged, traps are sluggish, separators need more frequent cleaning, gauges and similar equipment need more frequent overhauling and become less dependable.

Dirty steam has far-reaching influences. It is a small cause with big consequences.

Dark as pitch in 1858 . . . .



Bright as day now . . .

BRAVE was the soul who ventured out in the poorly lighted streets our fathers and grandfathers knew. Only within a small radius around the lamp was the gloom of night dispelled.

Today, electric street lighting has halted the sun in its course. There is no night. For twenty-four hours streets are bright as day.

Only by thus comparing the new with the old can we see the changes that time has made . . . in felts as well as street lighting.

Back of every Hamilton Felt is three generations of experience . . . dating back to Asa Shuler and J. W. Benninghofen in 1858.

It is this experience that marks the difference between ordinary felts and Hamilton Felts. It is this experience that determines what a Hamilton Felt should be. It dictates the wool to be used, the proper mixing of it, the method of carding of weaving, the number of threads to the inch — in short it dictates the entire process. Naturally a Hamilton is a better felt. Experience is the world's best teacher.

Try one Hamilton Felt. There is one to fit your needs exactly. Your check sheets will show you how much better it is.

Hamilton Felts are marked by two blue lines full width of the felt and by one shorter blue line midway between them.

Hamilton Felts

SHULER & BENNINGHOFEN, Hamilton, Ohio

The Miami Woolen Mills . . . Established 1858

Canadian News

Col. Price Resigns from Newsprint Institute

Just at a time when many observers had come to the conclusion that the newsprint industry was ready to emerge from its long period of extreme depression, as a result of agreements between the leading producers and a definite halt in the creation of new producers, came the announcement of the resignation of the chairman of the Newsprint Institute of Canada, who bases his action on the ground that certain violations of the agreement of that organization had been made.

Col. J. H. Price, in resigning as chairman of the above-mentioned body, emphasized that in the future Price Bros., of which he is active head, will adopt an independent policy. Ernest Rossiter, president of the St. Lawrence Corp., in a public statement, made it clear that he considered Col. Price's resignation "as fully justified and necessary in view of the recent definite violations of the Institute agreement."

The text of Col. Price's letter of resignation is as follows:

"Gentlemen:

"I became chairman of the Board of Governors of the Newsprint Institute of Canada last February because I was persuaded that I might assist the success of the Institute and thus serve the best interests of the industry which, under the trying circumstances, I was willing to place above the direct advantages of the company I represent. I was aware at that time of the suspicion and distrust which prevailed within the Institute, and I stated in very specific form that I would undertake to act only on a basis of full co-operation and observance of agreements by all members.

"In the intervening months I have spared no efforts to promote to the best of my ability the interests of all companies belonging to the Institute, both in Canada and with regard to relations between these companies and American customers. I have, however, become convinced during this time that the expressed purposes of the Institute and my efforts to accomplish them have been and are defeated by the unwillingness of members to conform to either the spirit or the terms of their membership agreement. In the case of one Institute company this unwillingness has recently taken the form of aggressive action which is in opposition to the interests of other member companies and which, in my opinion, constitutes a direct and flagrant violation of the Institute agreement.

"Under these circumstances, it has become fully apparent to me that, as chairman of the Institute, I have been placed in the position of being an unwilling party to breaches of faith and in the position of acting to the disadvantage of shareholders whom it is my duty to protect.

"I decline to tolerate such a position further and, in consequence, I beg herewith to submit my resignation as chairman of the Institute. I must also advise you that, in view of these circumstances and the recent developments, Price Bros. & Co., Ltd., now intends to adopt immediately whatever independence of policy and action it may be compelled to follow in order to protect its position and the interests of its shareholders against the aggression already referred to.

"I sincerely regret the conditions within the Institute which make necessary this action on my part, but I must make it clear that it is effective today and that it is not subject to reconsideration.

"Yours faithfully,
(Signed) John H. Price."

Though no specific mention is made in the letter as to who is the offending company, nor just how it acted contrary to the Institute agreement, it is generally felt that the actions referred to are the negotiations recently brought to a successful conclusion between Canada Power and Paper Corp. and the Hearst interests, whereby the latter acquired a large share interest (thought to be about 20 per cent) in Canada Power and Paper, which in turn has acquired a large interest in the Dominion Newsprint Co., the Hearst subsidiary which is negotiating for the establishment of a 1,000-ton newsprint mill in the Gander Valley in Newfoundland.

New Tariff Beneficial to Paper Industry

At a special session of the Federal Parliament, called to take measures for the relief of unemployment, wholesale changes in the customs tariff were announced, the duties on the products of key industries being sharply raised and being put into force immediately. This will have widespread effect upon importations from all countries, and in particular from the United States. Premier Bennett stated that, at the most conservative estimate, they would result in giving employment almost immediately to between 25,000 and 30,000 workers, and in all probability to a far greater number when the full effects of the revision were being felt.

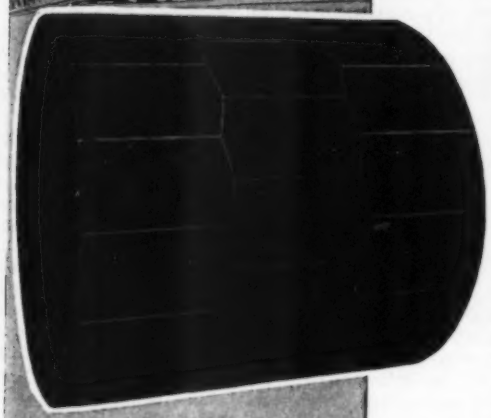
The most important, as well as the most interesting, change is that affecting paper imported for printing magazines, periodicals and agricultural papers. This grade of paper was, under the tariff which prevailed previous to the changes just made, subject to 25 per cent general tariff, which applies to the United States, and is, in fact, the rate of interest to Canadian papermakers. From this rate there was a drawback allowed of 80 per cent, which brought the actual duty to be paid down to 5 per cent. Under this rate, together with whatever concessions the United States manufacturers saw fit to make, Canadian publishers could use paper made in the mills of the United States that made competition of Canadian-made paper very difficult; and some of the larger consumers of book paper did obtain their supply from United States mills. Canadian book paper manufacturers were not able economically to compete with the American mills, and did not choose to enter into a gruelling rate-cutting campaign.

Now the Bennett tariff schedule has abolished the drawback of 80 per cent on paper imported for the manufacture of periodicals, making the gross rate of 25 per cent applicable to all imports of this grade of paper. Some publishers contend this will work hardship on them on the ground that Canadian fine paper mills are unable to supply certain classes of paper, or that such paper as is made in Canada is inferior in quality. Canadian manufacturers of fine papers do not agree with this view, and have consistently opposed the drawback, on the ground that they are fully capable of meeting the needs of Canadian publishers.

In the paper trade there is a general feeling of satisfaction with the treatment the paper business has been accorded by the Premier, acting as Finance Minister, not only with respect to those items directly affecting the pulp and paper business, but also regarding the schedules as a whole. The revision proposed manifestly is to be regarded as a revision in fact and not as an effort to construe the tariff as a political document. Mr. Bennett, paper and pulp interests feel, is to be heartily congratulated on this first major step he has taken toward a constructive and strikingly Canadian policy to guide him throughout his administration.

Allege Dumping of Canadian Pulp

The Puget Sound Pulp and Timber Co., Aberdeen, Wash., has sent a petition to Assistant Treasurer of the United States, Seymour Lowman, asking that steps be taken to enforce the Anti-Dumping Law, "which is now being grossly disregarded in the dumping of foreign pulps by Sweden, Canada, Finland and Germany," the charge being that manufacturers of pulp are selling under manufacturing cost, "and on top of their costs are taking the loss of freight and other charges in gross disregard of the provisions of the Anti-Dumping Law, all to the detriment and possible ex-



NORTON PULPSTONE

using the same basic material as Norton Grinding Wheels, helps to produce your daily newspaper, grinding logs into fine, even-grained pulp for newsprint.

Norton Pulpstone is outstanding because of the long life of its service, its low stone cost, high production and the even quality of pulp. It is another example of Norton response to the needs of industry. Norton abrasive products touch the life of every man.

NORTON COMPANY, WORCESTER, MASS.

Grinding Wheels
Grinding Machines
Refractories ~ Floor and Stair Tiles

clusion from production of the industry on the Pacific Coast and other domestic producers in the South."

So far as Canadian manufacturers of wood pulp for papermaking are concerned, it is doubtful if any such price cutting as is alleged against them can be shown. The fact seems to be that they are refusing orders offered by United States consumers at prices too low to cover costs and expenses. The prices for the various kinds and grades of pulp are low, as are sales prices of many kinds of commodities at this time, but that Canadian manufacturers are selling pulp at less than it costs them to make it is a proposition that is absurd on its face. Doubtless the margin of profit is small; it may have disappeared for some manufacturers, but it is quite within the realm of safety to assume that the great majority of them are able to hold their product until the market recovers to normal, and that they are doing so.

Newsprint Depression Exaggerated

While for many months past everybody has been talking about the depression in the newsprint industry and discussing all sorts of plans for dealing with the crisis, the fact is beginning to impress itself on observers that the industry is the most steady and most solid one in the Dominion, and that in comparison with nearly all other lines of manufacture, it is making a wonderful showing. While most industrial establishments are running on part time, many with production down to 50 per cent or less of capacity, Canadian newsprint mills are running around 70 per cent of capacity, and are doing this in the face of an expansion in capacity without parallel in any other industrial enterprise, and in the face of the fact that in Newfoundland, a growing competitor, the newsprint mills are steadily maintaining capacity production. Newsprint production in Canada in August was 202,043 tons, which is nearly 15,000 tons less than in July, the mills operating at 66.4 per cent of capacity as compared with 71.3 per cent the previous month. The production for the first eight months of the present year stands at 1,702,070 a reduction of 64,000 tons, or 4 per cent, from the corresponding period of 1929, which is truly remarkable when considering the extraordinary depression in business all over the continent, and indeed throughout the world.

It is possible that shipments from now on may show some improvement. The past three months have had a seasonal influence on consumption which has made for further declines in shipments already made lower through general business conditions. From a seasonal point of view, consumption should soon be on the upswing, although to what extent it will be hampered by business conditions remains to be seen. Any improvement that can be shown in the next few months can hardly have an appreciable effect on the situation surrounding the industry as a whole. It is pointed out that there must be a very marked increase in shipments or a definite revision of prices before the manufacture of newsprint becomes a really profitable business for some companies. Nevertheless, any reversion from the moderate decline in production which has been apparent recently will be encouraging.

❖ QUEBEC ❖

Maclaren to Construct Fourth Power Plant

Announcement has been made of the proposed construction of a fourth power plant between Masson and Buckingham by the James Maclaren Co. $10,000,000 is the estimated cost of the plant, which will develop 120,000 hp. Plans as laid down in 1928, called for the construction of an addition to the power house at Buckingham, a 90,000 hp. project at High Falls, and establishment of a 250-ton newsprint mill, as well as enlarging the manufacturing facilities of the existent groundwood mill.

The newsprint mill, together with the installation of machinery, has been completed to all intents and purposes. Actual operations have been delayed until the newsprint market takes on a healthier hue. When the work was started,

Biggs 14 ft. diameter Rotary Digester erected at the plant of the Ola Sugar Company, Hilo, Hawaii.

Biggs Welded Equipment

In Hawaii, in Japan, in Australia, as well as in the United States and Canada, Biggs Rotary Digesters are performing their steady service of efficiency and economy. Welded or riveted equipment built by Biggs is used all over the world for cooking and bleaching straw, grass, bagasse, wood fibre, cotton linters, and other materials for manufacturing paper, boxboard, and like paper products.

Biggs all-welded rotary, tumbling, sulphate, and sulphite digesters have virtually eliminated maintenance costs, as well as the difficulties formerly met in the chestnut chip and other special processes. They have earned the same confidence as has long been enjoyed by Biggs riveted construction. They are accepted by all the major insurance companies irrespective of size or operating pressure.

Vessels electrically welded by Biggs have been accepted for installation in localities where the A. S. M. E. code has been adopted for unfired pressure vessels. They are uniform, dependable, *safe*. Biggs' complete fabricating and erecting service is at your command.

Biggs Builds —

Globe Rotary Digesters, Welded or Riveted
Tumbling Digesters, Welded or Riveted
Cylinder Rotary Bleaching Boilers
Stationary Vertical Digesters, Welded or Riveted
Pipe Lines, Welded or Riveted
Penstocks; General Welded or Riveted
Steel Plate Work

The Biggs Boiler Works Co., Akron, Ohio
New York, Detroit

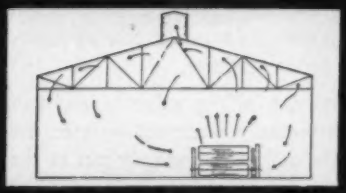
BIGGS ROTARIES *for years of dependable cooking and bleaching...* Biggs

THE REMOVABLE PANELS

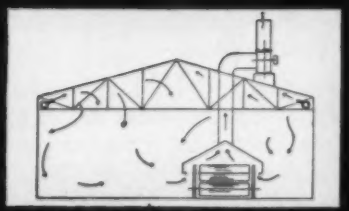
Another Ross Development!

Ross Hood—Uninsulated—as supplied in warmer climates and on machines equipped with vapor absorption systems.

ROSS PAPER MACHINE HOODS



BEFORE MOIST MACHINE ROOM. poor working conditions, high maintenance expense.



AFTER DRY MACHINE ROOM. good working conditions, low upkeep. No decay, rusting, deterioration.

The ROSS Paper Machine Hoods are insuring these five major advantages for greater economy and efficiency; (1) Built of structural steel and Johns-Manville Transite Asbestos lumber—fireproof, moisture and acid resisting with maintenance cost being practically negligible; (2) Panels and drop curtains built complete in our shops before shipment, greatly reducing usual erection time and labor costs; (3) Designed for erection without interference with normal operation of machine; (4) Construction and assembly permit removing or reassembling of any one or more panels without disturbing balance of hood; (5) Provide wide overhang and drop curtains on hinges or hooks to permit lifting up or removing for quick access to dryers and rolls.

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NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS

HEATING—VENTILATING—DRYING

the Maclaren Co. already had 10,000 hp. hydro development at Buckingham. It was necessary to step this up to take care of the anticipated needs of the newsprint mill, and a 15,000 hp. installation was made. Following this up, the company started work on the High Falls plant and the Cedar Rapids storage reservoir, to provide for the development of 90,000 hp., all of which is understood to have been contracted for by the Ontario Hydro-Electric Power Commission. This plant is in the final stages of completion.

Following up this work, the company has made application for approval of the construction of a fourth plant on the Lièvre River, about 21 miles east of Ottawa. The river will be dammed between Masson and Buckingham creating a breakwater over 100 feet high. The high banks of the river at this point will create a big head of water necessary for the proposed development of 120,000 hp. Plans submitted to the Government show that the company proposes to build a dam and intake structure across the Lièvre and to connect the intake by means of a tunnel to the power house. The dam and intake will be about 587 feet long, with additional abutments on either side. The dam will be 425 feet long and contain eight gates, 24 feet wide by 20 feet deep, and two waste gates each 18 feet wide.

The proposed financing is understood to include the transfer of the present outstanding stock of the James Maclaren Co. into that of the Maclaren Power and Paper Co., and the issuance of $15,000,000 first mortgage convertible bonds, bearing coupon rate of five per cent. The issued stock of the company will amount to 750,000 shares of no par value, of which 250,000 will be reserved against redemption of the bonds. The bonds are understood to carry a conversion privilege of 10 shares of common for each $1,000 bond. Upon conversion of these bonds, there would still remain in the treasury 100,000 shares of common stock.

Hearst-Canada Power Deal Assures Big Outlet for Newsprint

Last month an important conference was held in St. John's, Newfoundland, between R. G. and A. Reid and C. O. Conroy, directors of the Reid-Newfoundland Co., Frank W. Clarke, vice-president of Canada Power and Paper Corp., Hon. Tasker Cook, acting Premier of Newfoundland, and Sir William Coaker, executive member, on the question of renewing negotiations for the establishment of a newsprint plant on the Gander River. This project, which fell through last year, involves the granting of large concessions of timber lands in Labrador.

Frank W. Clarke gave out a statement to the effect that Canada Power and Paper had recently concluded arrangements with the Hearst interests, largest consumers of newsprint in the world, involving the acquisition by the Hearst organization of a stock interest in Canada Power, which in turn acquires a substantial interest in the Dominion Newsprint Co., the subsidiary company which has been negotiating on behalf of the Hearst organization for the acquisition of waterpower rights and timber limits in Newfoundland adequate for the requirements of a 1,000-ton mill.

Mr. Clarke stated that this union of interests involved the adoption by the Hearst organization of a policy in respect to their supply of newsprint which is similar to that adopted by the New York Times, the Chicago Tribune and the New York Daily News on this continent, and by the Rothermere interests in Great Britain, and that the Hearst interests will pay the market price for their paper, relying for protection of their future requirements upon their position as shareholders of the manufacturer, which will in future furnish a large proportion of their requirements.

D. E. Town and J. E. Coffin, representatives of the Hearst organization, who were charged with the task of handling the recent negotiations regarding the paper mill project in Newfoundland, were interviewed with reference to the statements of Frank W. Clarke, but would not discuss the situation. They stated that insofar as it related to the Hearst organization, Mr. Clarke's statement was correct.

Wilbert H. Howard, K. C., of the law firm of Brown, Montgomery and McMichael, Montreal, went to St. John's in company with the representatives of Hearst and of Canada

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Protect the threaded ends of pipe

Photograph shows how easy it is to protect threaded ends of pipe against wear.

Install PIPE-SAVERS in your threaded pipe and save money.

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Northwest Paper Company
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Tennessee Copper Co.
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Timken Roller Bearing Co.
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Sold by Leading Supply Houses

Pipe-Saver ready to insert.

THE PIPE-SAVER CORP. OF AMERICA

CARTHAGE, N. Y.

CAMACHINE 19

This machine has been designed for service in book and newsprint mills after a careful study of conditions in the press room as to just what characteristics a roll of newspaper or book paper should have built into it in order to meet the exacting conditions of speedy and smooth unwinding in the high speed modern web press.

CAMACHINE 19 will operate at any desired web speed up to 2,800 feet per minute and is built in widths up to 200 inches. Perfect rolls up to 40″ in diameter may be wound at this speed.

No loss of production—Cameron winders installed at weekend.

CAMERON MACHINE COMPANY

61 Poplar St., Brooklyn, N. Y.

Power and Paper, and is understood to have interviewed members of the Government in relation to a paper mill project in Newfoundland. Mr. Howard stated he had acted as legal adviser to both parties during the negotiations leading to the union of interests announced between the Hearst organization and Canada Power and Paper, and had accompanied his clients for the purpose of giving the Government the relevant facts regarding the new alliance.

In Canadian financial circles the union of the Hearst and Canada Power interests is regarded as one of the most constructive steps in the newsprint industry, in which this country is so keenly interested, in some considerable time. This latest arrangement is an important part of the program of Canada Power looking toward the stabilization of the industry, which in the past year resulted in the acquisition by that company of Port Alfred, Wayagamack, and Anglo-Canadian. In obtaining the last-named company, Canada Power secured as a partner and customer the Rothermere interests, largest consumers of newsprint in Great Britain. On this continent, by far the largest consumer of newsprint is Hearst. The fact that both Hearst and Rothermere will be substantially interested in Canada Power, through stock ownership, with the latter company one of the largest producers of newsprint in the world, appears as a thoroughly sound development from the point of view of the industry as a whole. While no details whatsoever were available in official quarters of the Hearst arrangement with Canada Power, it was estimated in authoritative quarters that the value of the newsprint involved in the transaction runs between $300,000,000 and $400,000,000.

Canada Power and Paper Corp. now controls six modern paper mills situated in the Province Quebec, namely, Belgo, St. Maurice, Laurentide, Port Alfred, Wayagamack and Anglo-Canadian. These mills have a total annual capacity of over 750,000 tons of newsprint, as well as a large output of other paper products. One of the properties of the corporation is the entire Island of Anticosti, which is owned in fee simple and which is the largest freehold timber area in America. Assuming that, as a result of the deal, Hearst will take his entire requirements from Canada Power and Paper, this company is assured of a customer who could absorb practically half of that organization's productive capacity.

This latest development in the industry has been accompanied by a revival of talk regarding further and important amalgamations in the industry looking toward a situation where one or two groups could so dominate the situation as to avoid the evils of overproduction and price cutting. A matter of considerable interest to Canada Power and Paper shareholders is the agreement arrived at between their company and the Hearst interests in the matter of the Gander River project in Newfoundland. There is stated to be ten to fifteen million cords of pulpwood involved in that deal, and for it the company will pay, according to a report, $300 a square mile in addition to $1.50 per cord stumpage.

Canipco News

Denial has been made by International Fibreboard, Ltd., an International Paper subsidiary, that considerable loss was sustained in the fire which occurred recently in the company's mill at Gatineau, although some damage was done by smoke and water. The operations of the mill were not interrupted. The fire took place on a Sunday and the 160 men employed in the mill resumed work on Monday morning. For sometime past the International Fibreboard plant has been operating 24 hours a day, six days a week to fill orders for both the domestic and the export trade.

The entire development department of Canadian International Paper Co. was abolished recently. The department was housed in the Victoria Building, Ottawa, and some 48 people, formerly employees of the branch, have lost their positions. Major Walter Blue, formerly chief of the department, has been taken into one of the other branches of the Ottawa office.

International Paper apparently anticipates running its Canadian mills at or near capacity for sometime. In the course of a recent interview Premier Taschereau said: "The

The Foundation!

THE higher a building—the more important the foundation beneath it!

The higher the quality of paper—the more important is the basic structure and felting of the fibres!

Fine coating and careful finishing can produce the best sheet only if the original formation is the best!

To assure the best foundation, equip your machines with Tyler Fourdrinier Wires!

Smooth-running—strong—uniform—dependable—Tyler Wires drain off the water evenly from the entire area of the sheet and produce a uniform felting of the fibres!

Tyler Wires are used by the country's leading paper makers in the production of all grades of paper. Try them on your machines!

Send for samples

The W. S. Tyler Company
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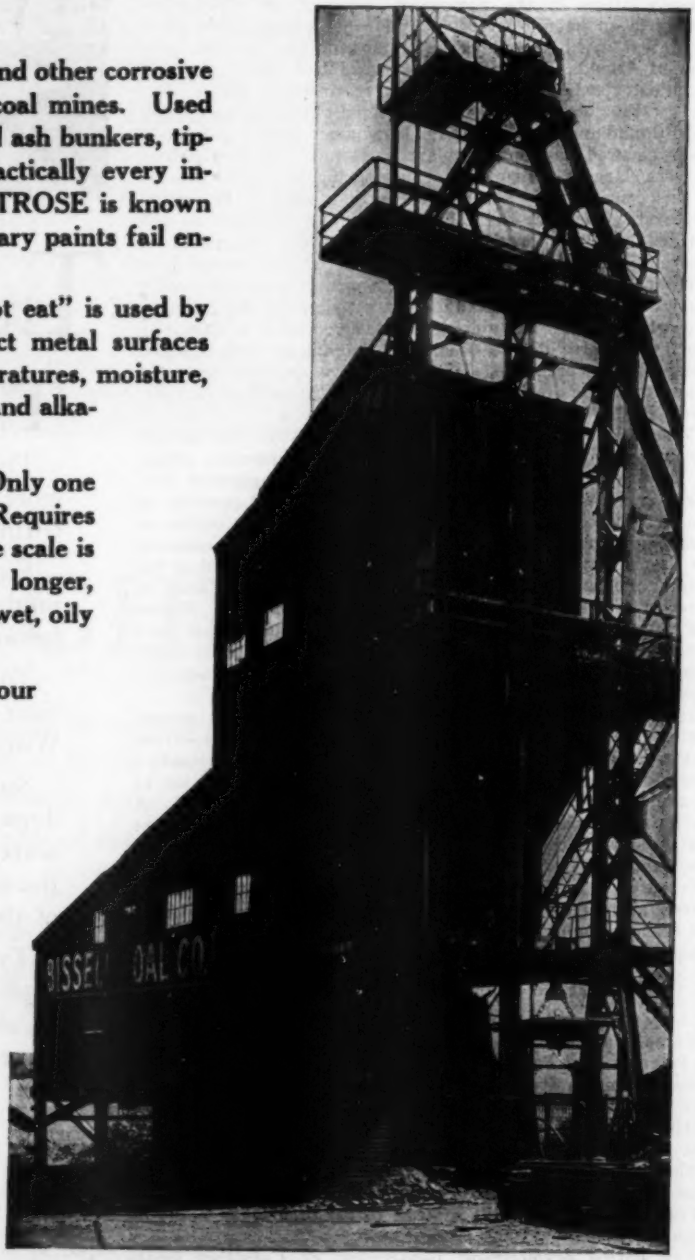
TYLER WIRES

Coal industry uses NITROSE to guard property and profits



NITROSE conquers the sulphur fumes and other corrosive agents that attack metal equipment in coal mines. Used to protect inside and outside of coal and ash bunkers, tipples, cages and stacks. Here, as in practically every industry in this and foreign countries, NITROSE is known for its ability to "stand up" where ordinary paints fail entirely.

This "liquid armor that corrosion cannot eat" is used by maintenance men everywhere to protect metal surfaces from the corrosive action of high temperatures, moisture, brine solutions, sulphur and acid fumes and alkalis.

Costs less because of the labor it saves. Only one coat is needed except in extreme cases. Requires no mixing, no stirring. Wire brushing the scale is the only preparation necessary. Lasts longer, too. Can be applied equally well on hot, wet, oily or cold surfaces.

Write us today—let us help you with your corrosion troubles.

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NITROSE

question of unemployment may have been exaggerated. I saw a representative of the International Paper Co. this morning, and he told me that this year that company will cut 370 million feet of wood, whereas last year the cut was 300 million feet, a normal cut. That will mean employment for thousands of men."

One factor that will contribute to keep Canipco mills running at a high rate is the fact that the parent company has shut down its Degrasse mill in New York State and is transferring the tonnage to the Canadian mills. This constitutes the eighth mill closed by International Paper in the United States since the first of the year; but while primarily the chief impetus appears to be the cheapness of power and the proximity of pulpwood here, the current depression in trade and industry in that country may also be regarded as a factor.

The second 230-mile transmission line from the Paugan hydroelectric plant of Gatineau Power Co., a subsidiary of International Hydro-Electric System, to Toronto, has been placed in commercial service. The new line is a 220,000-volt steel tower aluminum line, a duplicate of the first one, and is being used in conjunction with it for the delivery of power under contract to the Hydro-Electric Power Commission of Ontario. The two lines are about 100 feet apart and have the distinction of being the highest voltage transmission lines in operation in Canada. Over these lines Gatineau Power is at present delivering to the Commission 150,000 hp. of electric energy, which is being distributed in the Toronto area to supplement the power supplied from Niagara Falls.

At a recent meeting of the directors of Canada Power and Paper Corp. three vice-presidents were appointed. George N. McKee, who was already vice-president of the corporation, remains as senior vice-president. C. R. Whitehead becomes executive vice-president. Frank W. Clarke and Robert A. McInnis also become vice-presidents, the latter in charge of operation.

Orville F. Bryant, who for the past three years was manager of the Nashwaak Pulp and Paper Co., St. John, N. B., has taken over the duties of his new position as secretary of the Technical Section of the Canadian Pulp and Paper Association, and an office has been fitted up for him on the ground floor of the Pulp and Paper Research Institute, on the McGill campus, Montreal. Before his connection with the St. John Mill, Mr. Bryant was for several years with the Laurentide Company at Grand'Mère, and prior to that he was chief of the Pulp and Paper Division of the Forest Products Laboratories of Canada, at Montreal.

ONTARIO

Expect Curtailment of Woods Operations

Unless conditions materially improve within the next couple of months there will be at least 10,000 fewer men employed at pulpwood operations and lumbering in the bush this winter than there were a year ago. With yards overtaxed at the present time, and no markets apparently available, most operators plan, it is understood, to reduce their cutting this season by a third. In some cases the reduction will approximate 50 per cent. In fact, the largest logging company in Ontario has expressed the intention of taking out only 350,000 pieces of timber next season, whereas last winter it took out 1,250,000 pieces. Reduced production will mean reduced employment. Not only will the "bush" army drop from some 20,000 strong of other years to 9,000 or 10,000 at the most, but there will be a decided decrease in the number of sawmill crews. Right now, in the case of most mills, a single crew is operating, whereas two or three were engaged formerly. Similar conditions are said to exist in the pulpwood industry. In some areas operations will, it is said, be up to standard, but in the majority of instances, due chiefly to the general uncertainty regarding

Installation of "leadized" pipe in the Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.

"LEADIZED"

A continuous protective coating, inside and outside—Not a lining

Application of the "leadizing" patented process to pipe made of any wrought material makes it resistant to all acid solutions used in pulp and paper manufacture.

Water pipe lines that are "leadized" remain free from slime. Friction is reduced in "leadized" paper stock lines.

A few of our installations:

Allied Paper Mills, Kalamazoo, Mich.
Brown Paper Co., West Monroe, La.
Bryant Paper Co., Kalamazoo, Mich.
Combined Locks Paper Co., Appleton, Wis.
Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.
Kalamazoo Paper Co., Kalamazoo, Mich.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Nekoosa-Edwards Paper Co., Port Edwards, Wis.
Paul Sorg Paper Co., Middletown, Ohio
Thilmany Pulp & Paper Co., Kaukauna, Wis.

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Engineers, Fabricators and Erectors of all kinds of piping systems

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Who Says It Doesn't Pay to Use an OLIVER UNITED Save-All?

Direct Benefits
(for example)

Fiber losses (board stock) reduced from 4.32 to 0.92 lbs. per 1,000 gallons.

Fiber losses (tissue stock) reduced from 3.5 to 0.7 lbs. per 1,000 gallons.

Fiber losses (kraft stock) reduced from 5.85 to 0.2 lbs. per 1,000 gallons.

Fine fibers returned to the machine thus helping to make a better sheet.

Cost for filler reduced by the amount recovered.

Indirect Benefits

Water is entirely suitable for re-use on showers. This feature is particularly valuable to those mills faced with contaminated water or periodic water shortages.

In case only part of the water is re-used, the effluent vented carries only negligible losses.

With the same water used over and over again, the temperature of the pulp can be kept more uniform.

With the water used over again, alum requirements are greatly reduced.

Stream polution is eliminated.

Oliver United Save-Alls produce direct tangible results, measurable in dollars and cents. They also produce indirect benefits not to be ignored. They produce these benefits to a greater degree than any other type of save-all available.

There is no question about the high investment value of the Oliver United Save-All.

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TIMMINS, ONTARIO — B. D. Kelly
HALLE, GERMANY — Wilhelm Lill
SCHEVENINGEN, HOLLAND and SOERABAIA, JAVA — Van Lelyveld & Co.
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JOHANNESBURG — E. L. Bateman

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HONOLULU — W. A. Ramsay Co.
MANILA — The Edward J. Nell Co.
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newsprint, reduced activities and reduced employment will be the order of things.

The Government has already taken the matter in hand. Premier Ferguson and Hon. William Finlayson, Minister of Lands and Forests, had a long interview a little while ago with a deputation headed by George B. Nicholson, Conservative member-elect for East Algoma, and comprising 24 operators representative of the lumber and pulpwood industries from the Quebec and Manitoba boundaries. No announcement came from the Government afterward, but it is learned on good authority that steps will be taken immediately from Queen's Park to ease, by means of road construction and other northern development work, any acute unemployment situation that may arise from the slackening off in pulpwood and timber operations.

The operators pressed, it is said, for an abatement of their timber dues and a reduction in their bonus stumpage. Without such encouragement they would be compelled, they are said to have informed the Government, to operate on an even more reduced scale than now obtains, and in some cases smaller companies might have to go out of business altogether. Compliance with this request would cause a heavy drop in revenue from forest products for the provincial government. Though no promise was made to the deputation, some concessions will probably be made; and it is expected that they will be of such a nature that companies carrying on logging will be enabled to continue without creating great hardship among bushmen. Every assistance will be given companies by the government in obtaining timber areas, provided they can show that they have markets for the finished product.

J. H. McDonald, of Pembroke, has been appointed superintendent of Algonquin Provincial Park. He succeeds J. W. Millar, who is retiring from the post, and in future will be located with the Department of Lands and Forests at Toronto. The new superintendent is given jurisdiction over fire rangers, park rangers and timber scalers, and will also be invested with the powers of a police magistrate to try cases under the Parke Act. His supervision will extend judicially to game and fish. In this way the duplication which previously obtained, owing to there being two distinct organizations of rangers, one for fire protection and the other patrolling purely for park purposes, has been eliminated.

The Strathcona Paper Co., of Strathcona, has put into operation a two-cylinder board machine with a capacity of from 12 to 14 tons of light weight boards per day. The company has also completed the construction of new general offices in the factory building. George R. Finlay is secretary-treasurer of the company in charge of sales, with office in Toronto; and the company's product is also handled by W. P. Bennett and Son, Toronto.

Dominion Boxboards, Ltd., Toronto, recently broke Canadian records three days in succession. The mill finally reached a production of 123 tons in 24 hours and the average for the three days' run was 114 tons. The Dominion Boxboards is owned and operated by the Dominion Envelope and Cartons, Ltd., which also controls the Dominion Envelope and Cartons (Western) Ltd., with factories at Winnipeg and Edmonton.

It is stated on good authority that the large rayon plant of Courtauld's (Canada), Ltd., at Cornwall, is to increase its production by from 25 to 30 per cent. Plans for an extension to the mill are now under consideration and work will be commenced as soon as possible. When the addition is completed, it will mean work for an additional 200 or 300 hands, male and female.

Rapid progress is being made with the transportation of contractors' plant at the hydroelectric power development site at Abitibi Canyon, and it is being put to work as fast as it can be placed in proper position. The contractors have arranged to take on old employees of the Espanola Division of the Abitibi Power and Paper Co., which is running on

Nash Hytor Vacuum Pumps are furnished in capacities up to and exceeding 5000 cu. ft. of air per min. at 20 in. vacuum.

No pump shut-downs

A NASH Hytor Vacuum Pump is an efficient and thoroughly dependable unit.

It is sturdily and simply constructed and will operate continuously without a shut-down. Attention, other than occasional lubrication, is seldom required.

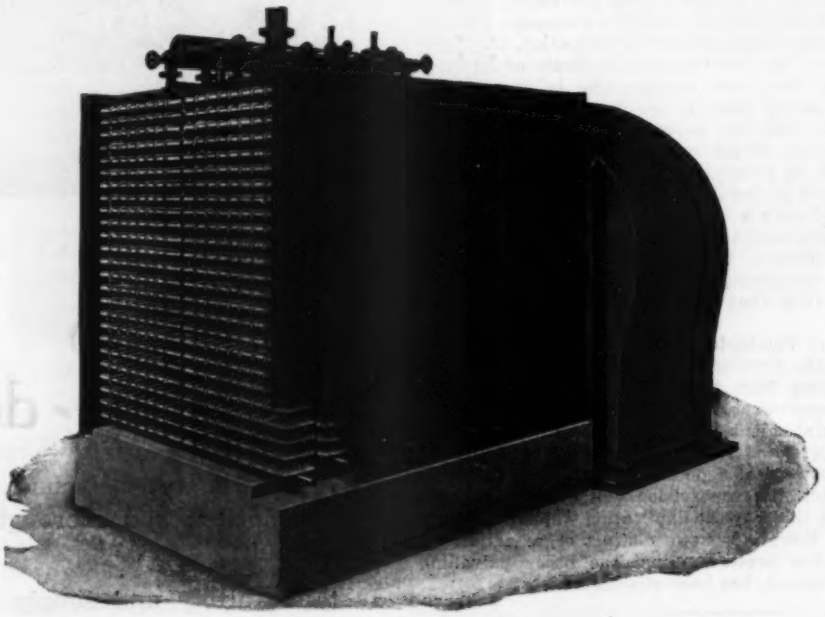
The Hytor has only one moving element. This is a rotor which revolves without contact in the casing. There are no rubbing surfaces. No parts which require frequent adjustment and replacement.

Write for descriptive bulletin.

THE NASH ENGINEERING CO.
161 WILSON ROAD, SO. NORWALK, CONN.

Nash Hytor
VACUUM PUMPS & COMPRESSORS

Stickle Blast Coil Heater or Economizer Will Dry Your Felts With Hot Air



STICKLE air cooled condenser maintains a vacuum of 10 to 15 inches on the return line of your paper machine, returns condensate to the boiler room as hot as it can be handled with a pump without the admission of cooling water. Will heat 1000 cubic feet of air per minute for every ton of paper dried per day, furnishing hot air in the pit to dry the felts and absorb the vapor under the dryers, making a direct saving of at least 15 per cent in steam consumed for drying the paper and ventilating the machine room. This can be done at a moderate cost. Are you interested? Complete plans furnished without charge.

Stickle Steam Specialties Co.

INDIANAPOLIS, IND.

AUTOMATIC STEAM CONTROLS
BLOWING THROUGH DRAINAGE SYSTEMS
COMPLETE LINE STEAM SPECIALTIES

reduced schedules, as and when they want them, so far as possible. The work immediately ahead, such as rock excavation and the like, will be able to proceed without interruption.

Interlake Tissue Mills Co. is at present rebuilding the No. 1 machine at its plant at Merritton, including a new main dryer, by Bentley and Jackson, of Bury, Lancashire, England, and calenders by the Dominion Engineering Works, Ltd., Montreal.

❖ NEW BRUNSWICK ❖

Work Progressing at Dalhousie

Good progress is being made in the installation of the two new machines at the Dalhousie mill of International Paper. It is expected that these will be ready to produce newsprint early this month, increasing the capacity of the mill from 250 to 500 tons a day and giving International Paper a total capacity of 1,800 tons in its three Canadian mills.

The company is building 30 houses for its employees on ground purchased from the Dalhousie Land Co. The construction is under the supervision of George D. Bearce, general manager of the Dalhousie mill. Several of the houses will be enclosed in brick, the balance being all lumber, except the foundations.

Extended surveys conducted during the summer disclosed that the forests of New Brunswick are unusually free from serious insect ravages. A broad investigation carried on by L. J. Simpson, in charge of the forest insect branch of the Dominion Entomological Laboratory located in Fredericton showed that the province's woodlands have received no visitations by insect pests in epidemic form. There have been a few isolated outbreaks of the birch saw-fly leaf miner and the birch leaf skeletonizer, but the damage done has not been of economic significance. Timber stands decimated by the rapacious spruce budworm between 1910 and 1920 have recovered largely.

St. John Mill to Close

Formal announcement has been made that the mill of the Nashwaak Pulp and Paper Co. at Fairville, on the outskirts of St. John, will be shut down about the 20th of this month. The cessation of activities at the mill is indefinite as far as duration is concerned, and one report is that operations may never be resumed. This is looked on by some as an extremist report, but there are few who believe the reopening will be within six months.

The announcement of the shutdown followed closely on the departure of O. F. Bryant, who had been mill manager for three years, to Montreal, where he has accepted the position of secretary of the Technical Section of the Canadian Pulp and Paper Association.

Employees of the mill are endeavoring to find places in the International mill at Dalhousie and the Fraser mill at Atholville. Some of the men are said to have secured berths in these mills, and to be ready to move soon after the closing of the Nashwaak plant.

❖ BRITISH COLUMBIA ❖

To Erect New Board Mill in Vancouver

The Sidney Roofing and Paper Co., Vancouver, is completing plans for the construction of an insulation board plant at Granville Island, Vancouver, which will mean the expenditure of $250,000. The company has been working out the details, and within a short time it is expected that final plans will have been prepared.

It has been announced by R. W. Mayhew that work on the new project will be started by the latter part of the year

RYERSON

IMMEDIATE STEEL FOR MAINTENANCE AND REPAIR

When something breaks . . . and steel is needed in a hurry . . . you can depend upon Ryerson for quick action. Complete stocks of all steel products, including:

Bars	Wire	Babbitt Metal
Shapes	Chain	Tool Steel
Structurals	Turnbuckles	Bar Iron
Rails	Shafting	Refined Iron
Plates	Boiler Tubes	Floor Plates
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Write for the Journal and Stock List — the "key" to Immediate Steel.

JOSEPH T. RYERSON & SON INC.

Chicago Milwaukee St. Louis Cincinnati Detroit
Cleveland Buffalo Jersey City Philadelphia Boston

STEEL

Lawrence "Vortex" Sureflo Pumps

for pulp and thick stock

For modern and dependable paper stock pumps engineers are today specifying Lawrence "Vortex" SUREFLO Pumps, because the SUREFLO principle has proven in actual service its ability to handle pulp and thick stock of high consistency, coarse refuse, stringy material, etc. with continuous ease and unusual efficiency.

WHERE DEPENDABILITY IS THE FIRST CONSIDERATION—you will find the Lawrence "Vortex" SUREFLO Pumps.

The SUREFLO pump is made in the Horizontal Shaft type as well as the Vertical.

You will find complete description and valuable data in bulletin D-35.

Lawrence Pump & Engine Co.
P. O. Box 70, Lawrence, Mass.
New York Office, 90 West St.

Cleaner Air means Better Paper!

With competition as it is today mills with clean air from Buffalo Air Washers have a decided advantage because they have less spoilage, and better working conditions.

Air cleaned and heated in Buffalo Air Washers pays the cost of the installation. Let us show you how little it costs to have efficient machine room ventilation.

Buffalo Forge Co.
213 Mortimer St. Buffalo, N. Y.
In Canada:
Canadian Blower & Forge Company, Ltd., Kitchener, Ont.

This new book should be on the desk of every engineer—

A new illustrated catalog, dealing with the latest developments in air conditioning equipment has just been completed by our engineers.

A request on your letterhead will bring this catalog, No. 480-A, by return mail.

Write for your copy

"Buffalo" *for* **Heating, Ventilating Mechanical Draft Apparatus**

and the plant should be ready for operation by the early part of 1931. Most of the machinery that is to go in the new building is on order. The ground immediately adjoining the paper mill is being prepared for the foundations to carry the newest addition to the plant.

Powell River Increases Pay-roll

The Powell River Co. pay-roll has been enlarged due to plant extensions and now shows an approximate strength of 1,500 men. Of this total, slightly over 1,200 are British subjects, ranking the mill high on the list of the province's industrial plants employing British workmen. In addition to the company pay-roll, several hundred men are included on the roster of Stuart Cameron and Co., contractor on the Lois and Powell River power development work.

The company recently secured contracts for 16,000 tons of newsprint a year for the **Daily Oklahoman** and the **Oklahoma City Times**, which were previously supplied from central Canada and the northern United States. This order was placed with Powell River by E. K. Gaylord, general manager of the two newspapers.

Power Development at Port Mellon

Vancouver Kraft Co. has made application to the Provincial Water Board for permission to utilize 35 cubic feet of water per second from Rainy River, with which to develop 2,000 hp. for its pulp and saw mills at Port Mellon, Howe Sound. The company, which is a subsidiary of Columbia River Paper Co., Portland, Ore., took over the Port Mellon plant started about 20 years ago by Howe Sound Pulp and Paper Co. Since acquiring the property the company has invested about $1,500,000 in modern machinery and equipment for the 50-ton pulp mill, and also the saw mill. The latter shut down several months ago, due to the lumber market situation. The pulp mill, which uses waste from the saw mill, was also compelled to cease operations. It is expected, however, that the whole plant will resume operations toward the end of the year.

Vancouver Kraft owns an old water right for 44.8 cubic feet from Rainy River. This entitles the company to use the water for industrial purposes in connection with the pulp mill. The additional 35 cubic feet requested will, it is believed, absorb the balance of the stream. This water, however, is being sought for power purposes. Although the company has a steam plant, it proposes to install an auxiliary hydroelectric plant.

New Mill Projected

Definite decision as to the establishment of a new pulp and paper mill at Vancouver is to be made at a very early date. If the proposal matures, this will mean the investment of several million dollars by United States capital in the development of a 500-ton pulp and paper mill on the Fraser River, according to Howard T. Cole of New York, who recently spent considerable time in Vancouver in connection with the project.

According to Mr. Cole, the matter is now being discussed in San Francisco, and everything is in readiness to take up options and proceed with the development immediately following receipt of favorable word from the interests now in conference. Plans have been prepared and work can be commenced as soon as authorization is secured, it is stated. C. C. Hockley, consulting engineer of Portland, Ore., has drawn up designs for a plant.

According to information released, the company holds options on a 70-acre site on the Fraser River just east of Fraser Mills. If plans mature the company intends to take up this option immediately and to arrange for a power supply through the B. C. Electric Railway Co. It also intends to utilize either the Fraser River or Coquitlam Lake as the source of water supply. Timber for the proposed mill will be obtained from the tracts on Vancouver Island and the mainland. The company has already secured large limits between Alberni Canal and Nitinat Lake along the Thompson River on Vancouver Island.

"4-Point"
Power Transmission Is Dependent On —

Surface adaptability—strength—pliability and resiliency.

VIM has these properties to a superlative degree. Its greater surface adaptability allows complete conformation to the pulley surface. VIM takes hold of a pulley at lower tension.

These qualities . . . its greater strength, pliability, resiliency and surface adaptability are the reasons for VIM'S remarkable pulling power and longer life.

Men who solve power transmission problems will find valuable information in our pamphlet "4-Point Power Transmission"—now on the press. Write for a copy.

LEATHER TRADE VIM MARK BELT

A product of The HOUGHTON LINE

E. F. HOUGHTON & CO.
PHILADELPHIA, PA. *And All Over the World*

Sales Engineering vs. "Engineered Sales"

Consider Experience:

Experience is the Product of Doing and Seeing and Thinking.
Experience is the Foundation for future Designs and Decisions.
Experience is necessary to Ability.

The Rollway Bearing Company has been Doing and Seeing and Thinking for over twenty years; in the engineering that accompanies every sale there is embodied the counsel of old applications.

Recommendations to you are based firmly upon carefully interpreted precedent; layouts made up at your request are a composite of plans proved in practice.

This is sales engineering, a first acquaintance based upon service; you are not obligated — we may be judged.

The "engineered sale" disregards the customer's interests for the sake of the sale and the size of the profit; but the dusk has crept into its day —

We believe in the day of our sales engineering.

ROLLWAY BEARING

COMPANY INCORPORATED

SYRACUSE NEW YORK

ROLLWAY CYLINDRICAL ROLLER BEARINGS

ADVERTISING PAGES REMOVED

ENGLAND

Paper Trade Report

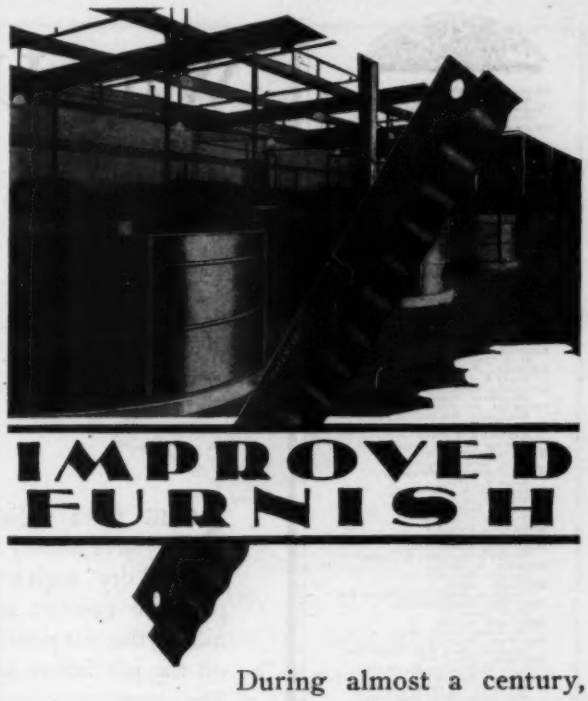
Imports of raw materials for papermaking showed a decrease of £198,497 in July, compared with the same month last year, and on the figures for the year as compared with the same period for 1929 there was a decrease of £95,114. Papermaking materials were imported to the extent of £1,054,496. There was also a decrease in the imports of manufactured paper and cardboard imported, the figure being £129,196 below that of July 1929, but there is an increase of £120,912 on the figures for the first seven months of last year. Exports were also down, both raw materials for papermaking and manufactured paper and cardboard showing decreases on the corresponding month and corresponding period of the year.

With papermakers in this country employment in general continues fair, states an official report, and writing on the state of trade, one correspondent in the industry states: "Some few of the prominent papermakers have already made a move to break away from the time-honored custom of self-suppression and reserve, and have launched out on quite an extensive scheme of advertising to the consumers." He goes on to point out that in order to make such a campaign really successful, it will be necessary for the makers, in conjunction with the leading wholesalers, to fix selling prices for the advertised and branded lines of paper, prices that shall bear their proper relationship to the cost of manufacture in an up-to-date mill, otherwise extensive advertising may have the effect of adding very little to the total sales of the line in question. The reason for this is that any line of goods freely advertised without a fixed selling price becomes a medium for price-cutting on the part of the wholesalers until the competition becomes so keen that a large section of the trade refuses to handle the goods, the margin of profit having become so narrow that they are hardly worth selling. The writer concludes by saying that the wholesale merchants and agents in this country are just as necessary to-day as they ever were, but that is no reason why the makers themselves should not get into closer touch with the actual consumers to study their needs and wants.

An interesting lead in advertising has been set by The Association of Makers of Coated Papers of Great Britain, who are circularizing the advertising profession and other potential users with delightfully printed folders, produced, of course, on coated paper. These are sent out at intervals in transparent envelopes. One example is printed in black and green on a buff paper, and contains a tabulated list of eight practical reasons for using coated papers. Another emphasizes the possibility of a harmonious background by means a musical illustration. "It pays to use coated papers!" is a slogan incorporated into each folder.

An interesting suggestion is put forward in a recent issue of Spalding's Quarterly (The house-magazine of Spalding and Hodge, Ltd., wholesale stationers and paper merchants, that the paper trade might consider the establishment of a paper-testing station. This station might eventually act as an independent authority on paper disputes between the printer and his supplier. It is pointed out that in both Germany and America standard specifications have been adopted, and that the subject has been considered by the League of Nations and comes up for further consideration shortly. The proposal for the adoption of international standards, if accepted, would naturally lead to a British paper-testing department. A further suggestion arising out of this is that a special watermark might be introduced to signify that a paper had been made according to the standard specification for permanence.

A report has been issued to shareholders by the new directors and financial controller of Combined Pulp and Paper Mills, Ltd., which was formed in 1927, and had an issued capital of £790,000, in which it is stated that the affairs of the



IMPROVED FURNISH

During almost a century, many mills have come to depend upon SWW bars and bed plates to reduce beating time . . . Save power and labor . . . Improve the furnish.

If you would increase suction and breaking up of stock . . . if you would increase hydration and circulation, yet reduce liability of burning . . . In short, if you would produce a higher test sheet at the lowest possible cost—take it up with SWW.

SWWCo

Simonds-Dayton
Worden Tool Co.
L. & I. J. White Co.
R. J. Dowd Knife Wks.

SWW bed plates—Whirlwind, Diamond, Open center. SWW beater bars—Dowd Staggered (Pat.) Corrugated (Pat.) and Regular. Also, many other Paper mill devices . . . .
Write for list.

SIMONDS WORDEN WHITE CO.
Office
DAYTON, OHIO
Factories at DAYTON—CLEVELAND—BUFFALO—BELOIT

ALABAMA, *Birmingham*,
Alabama Clay Products Co.
CALIFORNIA, *Los Angeles*,
Robert M. Hartwell Co., Inc.
CALIFORNIA, *San Francisco*,
C. W. Haywood Co.
COLORADO, *Denver*,
H. W. Thomson
CONNECTICUT, *Hartford*,
Jackson & Sparks, Inc.
CONNECTICUT, *New Britain*,
Smith's Sons Co., Inc.
CONNECTICUT, *New Haven*,
The Warner-Miller Co.
DISTRICT OF COLUMBIA, *Washington*,
Price, Small & Sharp Co.
GEORGIA, *Atlanta*,
Atlanta Textile Supply Co.
ILLINOIS, *Chicago*,
Wm. M. Dee Co.
INDIANA, *Fort Wayne*,
Harry A. Neal
INDIANA, *Indianapolis*,
Indianapolis Belting & Supply Co.
IOWA, *Des Moines*,
Walrath Supply Co.
KANSAS, *Pittsburg*,
Marshall Supply Co.
KENTUCKY, *Louisville*,
E. D. Morton & Co., Inc.
KENTUCKY, *Paducah*,
Henry A. Fetter Supply Co.
LOUISIANA, *New Orleans*,
Woodward, Wight & Co., Ltd.
LOUISIANA, *Shreveport*,
Woodward, Wight & Co., Ltd.
MARYLAND, *Baltimore*,
Lambert & Mattison Co.
National Building Supply Co.
MASSACHUSETTS, *Boston*,
Waldo Bros. Company
MASSACHUSETTS, *Springfield*,
Oscar F. Carlson
MASSACHUSETTS, *Worcester*,
Waldo Bros. Company
MICHIGAN, *Detroit*,
The Rail Company
MINNESOTA, *Duluth*,
Duluth Rubbers Supply Co.
MINNESOTA, *Minneapolis*,
Northern Machinery & Supply Co.
MISSOURI, *St. Louis*,
Handlan Book Mfg. Co.
NEBRASKA, *Omaha*,
American Machinery & Supply Co.
NEW YORK, *Binghamton*,
H. E. Lewis Co.
NEW YORK, *Buffalo*,
The Curtis Supply Co.
NEW YORK, *Hudson*,
American Hard Wall Plaster Co.
NEW YORK, *New York*,
C. C. Phillips, 110 W. 34th St.
NEW YORK, *Rochester*,
American Clay & Cement Corp.
Wm. Somerscales Sons Corp.
NEW YORK, *Rome*,
American Hard Wall Plaster Co.
NEW YORK, *Syracuse*,
Furnace Chester Co.
NEW YORK, *Utica*,
American Hard Wall Plaster Co.
NORTH CAROLINA, *Asheville*,
John E. Thayer, Inc.
NORTH CAROLINA, *Greensboro*,
Odell Mill Supply Co.
NORTH CAROLINA, *Winston-Salem*,
Keator Machinery Co.
OHIO, *Cincinnati*,
Wm. T. Johnston Co.
OHIO, *Cleveland*,
Cleveland Tool & Supply Co.
OHIO, *Columbus*,
Westwater Supply Co.
OHIO, *Dayton*,
Klinger-Dills Co.
OHIO, *Toledo*,
Hilton-Pettyjohn Lumber Co.
OKLAHOMA, *Tulsa*,
Marshall Supply Co.
OREGON, *Portland*,
General Power Supply Co.
PENNSYLVANIA, *Allentown*,
Morris Black
PENNSYLVANIA, *Bethlehem*,
Morris Black
PENNSYLVANIA, *Erie*,
O. C. Thayer & Son
PENNSYLVANIA, *Pittsburgh*,
Pittsburgh Supply Co.
PENNSYLVANIA, *Reading*,
Reading Foundry & Supply Co.
PENNSYLVANIA, *York*,
The Uhrven Company
RHODE ISLAND, *Providence*,
Reed & Leedy, Inc.
SOUTH CAROLINA, *Charleston*,
Allen & Webb Co.
SOUTH CAROLINA, *Columbia*,
Columbia Supply Co.
SOUTH CAROLINA, *Greenville*,
Greenville Textile Supply Co.
TENNESSEE, *Memphis*,
Reed & Dresser
TENNESSEE, *Nashville*,
McCarthy, Jones & Woodward Co.
TEXAS, *Beaumont*,
Merrell-Wilder Supply Co.
TEXAS, *Corpus Christi*,
San Antonio Machine & Supply Co
TEXAS, *Dallas*,
The Hulsey Co.
TEXAS, *El Paso*,
Geo. S. Thomson Co.
TEXAS, *Houston*,
Merrell-Wilder Supply Co.
TEXAS, *San Antonio*,
San Antonio Machine & Supply Co.
TEXAS, *Waco*,
San Antonio Machine & Supply Co.
VIRGINIA, *Lynchburg*,
Gertman L. Barrett, Inc.
VIRGINIA, *Norfolk*,
Empire Machinery & Supply Corp.
VIRGINIA, *Richmond*,
Southern Ry. Supply Co.
VIRGINIA, *Roanoke*,
Gertman L. Barrett, Inc.
WASHINGTON, *Seattle*,
Orcutt & Co.
WASHINGTON, *Spokane*,
Consolidated Supply Co.
WISCONSIN, *Milwaukee*,
W. H. Peters Co.
WISCONSIN, *Superior*,
The Spokes Company

Canadian Distributors

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A. R. C. Equipment Co., Ltd.
MANITOBA, *Winnipeg*,
Railway & Power Engrg. Corp.
NOVA SCOTIA, *Sydney*,
Railway & Power Engrg. Corp.
ONTARIO, *Montreal*,
Thomson-Gordon, Ltd.
ONTARIO, *Port Arthur*,
Wells & Richardson
ONTARIO, *Toronto*,
Railway & Power Engrg. Corp.
QUEBEC, *Montreal*,
Railway & Power Engrg. Corp.

Foreign Distributors

ENGLAND, *London*,
Refinery Products, Ltd.
FRANCE, *Paris*,
Compagnie Technique des Petroles
HAWAII, *Honolulu*,
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Why Use the "Makings"

When the Finished Product Costs Less in the Long Run and Gives Better Results?

SOME folks believe they save money by buying "dry" high temperature cement and mixing the components on the job before use. The economy doesn't stand up when you figure the cost of mixing labor, and the money lost through lessened efficiency of fire brick construction.

No hand-mixing, no matter how thorough or painstaking, can hope to equal that produced by the modern machinery and equipment used in mixing ADAMANT Fire Brick Cement.

ADAMANT comes to you in "wet" (plastic) form, ready-mixed and ready for use. It is always thoroughly and properly tempered; its components remain in suspension and are free from lumping. That's why brickmasons like ADAMANT for dipped, buttered or spread joints.

"Wet" (plastic) ADAMANT enables the mason to make *thinner* and *more efficient* joints that bond *firmer* and *tighter*. You get better brickwork . . . . less repairs and lower maintenance costs.

May we explain what ADAMANT and other ADA-products can do for you? Write us today.

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FIRE BRICK CEMENT

Other ADAPRODUCTS Include
ADACHROME Plastic Super-Cement
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The ADAMANT Gun

Write for booklet

company are in a critical condition, and its entire undertaking is in jeopardy. Unless £240,000 can be obtained almost immediately to complete the purchase of shares in certain Silesian undertakings, the company is in danger of losing its rights in these shares, substantial sums already paid on account of them, and the whole of its holdings in German paper mills which are at present pledged in connection with the agreement to purchase these Silesian shares. In order to enable the company to carry on successfully a total of £500,000 shares is required, and it is therefore proposed that a debenture issue should be made to existing shareholders.

◆ NEW ENGLAND ◆

Commodities Remain at Low Levels

September failed to live up to expectations in business improvement, particularly among the mills of the Connecticut valley, the operating conditions remaining generally unsatisfactory. The book mills in Maine and eastern Massachusetts were equally in want of orders to make the showing anticipated.

Raw materials in this section dropped to lower levels all but coal which strengthened noticeably after selling at record lows. Tidewater coal dropped to as low as $4.40 and $4.50 on cars Boston, hardened to a basis of $4.85 and a few spot cars brought up to $5. While these prices apply only to nut and slack used chiefly by stokered or other mechanically equipped plants, mine run was weak around $5 for a time. It advanced as quickly to $5.40 during the middle of the month. The chief buyers of old rope are anticipating the necessity of offering less but at this writing are still on a 3c dock and 3.5c shipping point basis for foreign and domestic respectively. Record lows for some years on New England repacked thirds and blues of 2.25c Holyoke district are reported, following sales a fortnight previously at 2.50c. Repacked whites with large pieces sold off from 5.50c to 5.25c in less than four weeks.

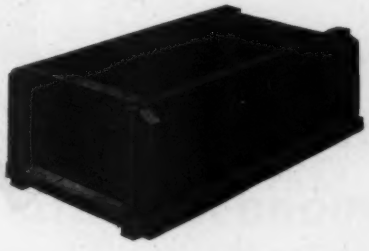
New England paper and board mills are being importuned to buy wood pulp from producers all over this continent and northern Europe. A Scandinavian kraft is offered at 1.55c dock Boston for prompt shipment, though several board mills did not like the sample and found nothing to their liking under 1.70. A Swedish prime bleached sulphite is actively pushed in this section at 2.80 to 2.85c dock and at least one west coast bleached sulphite is offered at 2.85c c.i.f. New England ports. One north European strong unbleached sulphite made its appearance here at 1.85c dock but there have been few tempted by anything less than 2.20, and several are not averse to paying 2.40 for standard brands. Domestic pulps from eastern sources of supply are not altered much. Several are offered around 3.12½c delivered mill, the best ones are still held at 4c to 4.50c.

The Coal Case

The 20 mills comprising the New England Paper & Pulp Traffic Association, took their coal rate case to the Interstate Commerce Commission last month in a two-day hearing at Concord, N. H., before an examiner. C. L. Whittemore, traffic manager, presented a case which is believed by traffic experts to be airtight in its immunity to successful attack. Reductions asked for range from $1 to $1.60 per ton on all rail coal from Clearfield district Pennsylvania to New England points. A mileage scale is proposed Which is quite in keeping with rates to points in New York state; the scale is also in line with decisions of the I.C.C. itself in other coal rate cases.

To Holyoke, Mass., for example, the present rate is $4.20, proposed is $3.29; to Fitchburg, present $4.70, proposed $3.43; to Lawrence, Mass., present $4.85, proposed $3.57; Bellows Falls, present $4.60, proposed $3.43; Claremont, N. H., present $5.10, proposed $3.50; Nashua, N. H., present $4.95, proposed $3.57; Lincoln, N. H., present $5.46, proposed $4.10; East Ryegate, Vt., present $5.80, proposed $3.96;

WOOD TANKS



We are equipped to build any kind of a wood tank. Specializing in Cypress and Redwood, we also make a great many tanks of Western Fir, Cedar, Eastern White Pine, Oak, Long leaf Yellow Pine and other woods. Every Stearns Tank is manufactured in our own modern tank factory by experienced men.

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ROLLS REVOLVE

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GOOD NEWS

PATENTS PENDING

THE MODERN TOP ROLL

FOR any top position, on any grade and weight of paper. A steel-journal, metal-body roll, covered with a special composition of quartz, feldspar, and ebonite, of granite hardness, smoothness, porosity, and durability, ensuring perfect performance, with no pick-up. A Stonite roll can be made in any desired weight, or on any top roll metal body, and will neither crack from journal expansion nor from any other cause. Stonite rolls are already in use in many leading paper mills, where their performance excels that of any previous type of roll. For full information about this important improvement in the industry, write to us or our nearest representative.

STOWE & WOODWARD COMPANY

EXCLUSIVE MANUFACTURERS OF STONITE ROLLS

NEWTON UPPER FALLS, MASSACHUSETTS, U. S. A.

W. E. GREENE CORP., Room 4004, Woolworth Building, New York City; R. W. HOLDEN, 10 South LaSalle Street, Chicago, Ill.; H. G. SPERRY CO., 415 Call Building, San Francisco, Calif.; A. G. CENTER, 124 West Main Street, Chilton, Wis.

Berlin, N. H., present $4.70, proposed $4.17; Groveton, N. H., present $4.70, proposed $4.10; Boston, present $4.22, proposed $3.57.

Rates via the New York Central would be slightly higher than these which are shortling via the Pennsylvania, Harlem River and the New Haven R. R. Rates to Boston and Berlin, N. H., are called "depressed" in present tariffs to meet tidewater competition here, and Canadian carrier competition at Berlin. Protestants however did not accept this theory and presented evidence in support at their contention.

If the rate reductions are granted, it is quite conceivable that tidewater operators would wage a battle to secure a cut in the $2.52 rate on coal from West Virginia mines to tidewater, for coal from these fields now dominates the New England market. Savings which would run over $100,000 at some paper mills, would naturally divert tonnage from the tidewater market to all rail, and it is hardly expected that the tide shippers would idly accept this.

Shipping Board Considers Transit Matters

At the meeting of the New England Shippers Advisory Board at Maplewood, N. H., last month, action was initiated by Andrew P. Lane, traffic manager of the Great Northern Paper Co., to stop heavy losses to shippers and carriers through loss and damage in transit. A committee of three will be appointed by W. F. Garcelon, New England general chairman, to itemize losses, confer with carriers and generally keep in touch with the situation. Mr. Lane reported $221,000 damage to newsprint alone. Rough handling of cars, poor packing by shippers and faster operating schedules are the causes.

At this same meeting commodity committees reporting their anticipated shipments for the October-December period in New England, were generally pessimistic. For the Paper Committee Pat Dowd of the Holyoke Traffic Bureau predicted unchanged newsprint shipments, printing paper and coated paper down 6 per cent, writing paper, etc., down 15 per cent, board down 15 per cent, pulp up 10 per cent, paper articles etc., down 10 per cent, tissues down 5 per cent. Comparisons are with the October-December period of 1929.

Since the lifting of the pulpwood embargo by Secretary Lowman some 100,000 cords of pulpwood have come to Portland, Me., much of it from Russia and there are ten additional cargoes scheduled from Archangel to Portland before the end of the year bringing some 50,000 cords additional. Wood for Oxford Paper Co., Hollingsworth & Whitney Co., and S. D. Warren Co has been unloaded at the Bancroft & Martin Rolling Mills plant, and for the International Paper Co. at its own Portland Woodhandling Co. plant. The Portland imports will be largest of any port on the coast and will exceed those of any other year. Wood from Newfoundland, Nova Scotia and New Brunswick has also been received by the Maine Companies.

Six Mills Exhibit at Tercentenary

The American Tissue Mills, Strathmore Paper Co., Crane & Co., Tileston & Hollingsworth Co., Falulah Paper Co., and Esleeck Manufacturing Co., presented attractive exhibits of their papers at the Tercentenary Industrial Exposition at Mechanics Hall, Boston, September 29 to October 11. The Tileston & Hollingsworth Co. booth was unique in that it included a vat, two molds, a press and dryers, used by foreign manufacturers of handmade paper. The vat contained a rag furnish, and paper was actually made before the eyes of the public.

The Crane exhibit included 21 illuminated glass reproductions of their watermarks, besides a miniature E. D. Jones beater in action.

One of the largest spaces in the building which was filled with the exhibits of over 200 manufacturers of various lines was that of the United States Envelope Co, who presented a nearly complete showing of their envelopes, drinking cups, and tissues together with large wall maps illuminated to show the location of offices, plants and agencies.

How Do YOU Measure Felting Economy?

We venture that you pay mighty close attention to the B.T.U. in the coal you buy, the grade of oil you use for lubrication, or the rate you pay for power—and why shouldn't you?

Do you also try just as hard to get the exact kind of felts your job should have—the one make that will do the best extracting job and wear the longest?

We, at ORR'S, know, and can bring the evidence to support us, that ORR FELTS will take out water faster and last longer than other felts. Let us prove it to YOU.

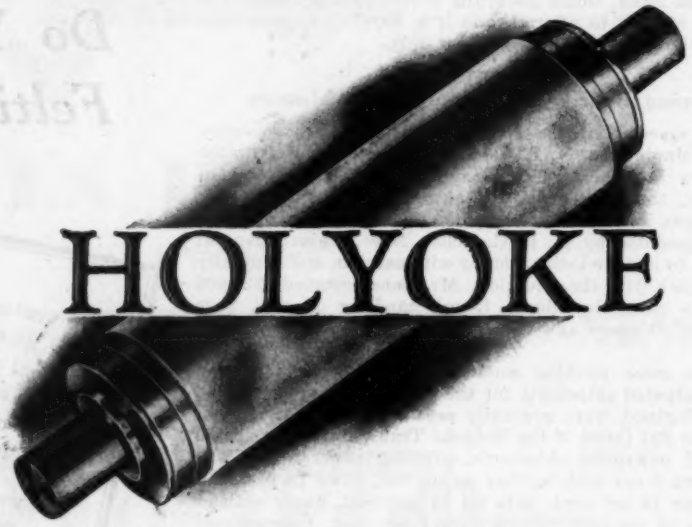
Full line of textures and sizes. A felt for every mill requirement.

The Orr Felt & Blanket Co.,
Piqua, Ohio

HEAT RESISTANT

PIONEERS SINCE 1863 IN THE MANUFACTURE OF PAPER MILL AND WOOD PULP MACHINERY

HOLYOKE Cotton and Paper Rolls are precision rolls. Not theoretically so—but actually. The result is a higher quality paper of whatever grade you are running,—uniform in finish throughout. HOLYOKE Engineering is the reason for HOLYOKE'S leadership for the past 65 years.



THE ability of HOLYOKE Rolls to resist friction heat and other heat to which they may be subjected tends to lengthen the life of the rolls as well as to produce a better surface on whatever grade of paper you may be running through your calenders. UNIFORMITY, RESILIENCY, LONG LIFE, and HEAT RESISTANCE—these four outstanding qualities of HOLYOKE Rolls are the result of HOLYOKE Engineering skill and leadership since 1863.

Write HOLYOKE MACHINE CO., HOLYOKE, MASS., Manufacturers of Super Calenders, Platers, Cotton and Paper Rolls, Washing and Beating Engines, Wood Pulp Grinders, Barkers, Chippers, Rag and Paper Dusters, Rag Cutters, Hydraulic Pumps and Presses, Hercules Water Wheels and Governors.

The HOLYOKE MACHINE COMPANY

FOUNDED 1863

Rising Paper Has Completed Rehabilitation

The Rising Paper Company, Housatonic, Mass., has just made a complete overhauling and remodeling of the entire plant, including several new buildings, new water wheels, new papermaking equipment in the way of Jordans and additional beating capacity. The mill has also been rather generally electrified, and Tolhurst machines and complete new drying system installed.

The general rehabilitation of the plant included a large number of smaller improvements, and the mill is now thoroughly equipped for manufacturing all high grade papers.

Maine Seaboard Paper Co.'s connection with the great Bingham dam of the Central Maine Power Co., is completed. This line is 110 miles long and will be ready to deliver some 110,000 volt to the paper company by December.

Russell Box Co., one of the largest folding paper box companies in greater Boston, has consolidated its activities in a plant leased for three years in Medford, Mass. The building occupied was formerly an important unit of the American Woolen Co. Two plants in Waltham and Chelsea were abandoned and machinery moved to the new place. The company produces a variety of collar boxes, corrugated tubes for electric light bulbs, bakery boxes etc., with national distribution. A machinery plant, The Specialty Machine Co., is also controlled by H. M. Russell of the box company in which new paper box machines have been developed under his supervision. This will also be moved to an adjacent location in Medford.

Two paper companies have been chartered in New England this month: the Colonian Paper Co., of Boston, to buy, manufacture and sell paper and paper products, Harry T. Epstein, president, Benjamin Gilman, treasurer; the New England Paper Co., Harry Szathmary, president, Jacob Shay, treasurer.

Forbes Lithograph Co., of Chelsea, Mass., has moved its coated paper mill to Lawrence, Mass. Machinery, methods and formulae will be the same at the new location. The change was made so that the finishing department at Chelsea could be enlarged without increasing the size of the plant.

Joseph N. Fountain, superintendent of the Old Colony Envelope Co. division of Strathmore Paper Co., has resigned and will continue his inventive and development work with machinery including machines in other fields besides envelopes. Mr. Fountain developed several of the machines used at present by the company. He was formerly with the Kellogg division of the U. S. Envelope Co.

Another who has resigned from Old Colony Envelope Co., is R. B. Lockwood formerly treasurer who severed his connection as of October 1. A new company to be known as Lockwood Envelope Specialties, Inc., has been chartered to occupy 5,000 feet in the U. S. Whip Co. building in Holyoke. They will produce a line of fancy envelope including greeting cards, deckle edges, papers etc. Cutting, folding, embossing and bordering machinery has been installed. A. B. Lockwood is head of this company.

William A. O. Weber

William A. O. Weber, vice-president and general manager of the Munroe Paper Company, Lawrence, Mass., died of heart disease while motoring in Nova Scotia on Sunday, September 14. Funeral services and interment took place at Great Barrington.

Mr. Weber was 52 years old. He was an expert paper technologist having learned the art in Germany. He was connected at one time with the laboratories of the American Writing Paper Company.

Do you know how to SHIP PAPER?

WITHOUT LOSS!
at minimum cost

Even though everyone is satisfied—It does not follow that you cannot still further reduce shipping losses or that it is impossible to ship even more economically. No matter what type of containers or skids you use—Signode can increase your factor of safety and also save you money.

Many Leading Paper Mills use Signode to great advantage. You, too, can profit. Ask for 10 minute demonstration or write for Paper Bulletin No. 10. There is not the slightest obligation.

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We also furnish round wire tensional reinforcements, all forms of nailed-on strapping, automatic wire tying machines, pail clasps, clutch nails, tag fasteners, etc. Write for general catalog.

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The Sealed Tensional Strapping

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BUNDLING PRESSES
NAPKIN FOLDERS
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Paper Converting Machine Co.
Green Bay, Wis.

FOR SALE

Good used Paper and Pulp Mill machinery of any description.

Also, we handle the sale of Paper and Pulp Mills.

Send for copy of our "Go-Between" Bulletin and "Plan".

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261 Broadway, New York City
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WANTED—72 inch rewinder—Cameron No. 10 or equivalent. 2 unwind stands. Address Box 183, The Paper Industry.

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***By* Harry Williamson**

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A 48-page pamphlet made up of practical helps, many of which have meant considerable savings in paper and pulp mills. Of tremendous value to the practical man. Price 50c.

THE PAPER INDUSTRY
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Rate Changes Proposed

New England Freight Association dockets the following proposed changes in rates: Paper, board roofing, etc., from East Walpole, Mass., to Bristol, Va., present 56½, proposed 51; paper boxes from Montville, Conn., to New York piers, present 19c, proposed 16c (boxes must be knocked down or flat); rate on pulp screenings from Lincoln, N. H., to Montville, Conn., reduced. Pulpwood from northern Vermont points to Mt. Tom, Mass., present 12.5c, proposed to 11.50c; coal from New Bedford and Fall River, Mass., to Fitchburg, Mass., present $1.46, proposed $1.38, to meet Providence, R. I. rates.

L. W. Crouse will be New England representative for Stanley Sales Corporation of Decatur, Ill., succeeding F. H. Knowlton who has been taken back to Decatur to a more responsible position. Mr. Crouse has been with Paper Makers Chemical Corp., in the South until recently.

American Tissue Mills property at Cushman in North Amherst, Mass., down for two years has been reopened for the production of paper novelty dolls. Perkins Novelty Co., an American Tissue Mills subsidiary will handle the line. The wax paper formerly made at Cushman is now produced in Holyoke.

Shipments of Canadian newsprint from Portland, Me., to Buenos Aires is expected to revive this fall with the sailing of the Castilian Prince with 1,000 tons about October 1.

Holyoke Card & Paper Co., is introducing Tint-cote, an improved bond paper, to the market. It is a four-page direct mail type bond outside coated inside. Tint-cote Folding Translucent has been developed in light weight card stocks to match the coated side of the bond, and is intended for use in return or mailing cards as well as in direct mail work alone.

Fire continues to menace the timberlands of Maine paper companies. The most extreme precautions will be taken during the coming hunting season to bar out hunters unaccompanied by guides and hunting may be suspended entirely by proclamation unless some rainfall comes in the meantime.

Glue Preservation

The problem of glue preservation, both from the standpoint of preventing mold and the elimination of putrefaction, has been one of extreme importance to both glue manufacturers and glue users. Many substances have been used with more or less success and at a cost which has added greatly to the original price of the glue used. Beta naphthol, with a relatively high phenol coefficient and thymol have undoubtedly received greater consideration over the past few years than most other chemical products.

During the past year there has been developed from the laboratory stage to actual commercial production a new product known as orthophenylphenol. Orthophenylphenol has a phenol coefficient of 38 in some organic solvents; however, this particular product is insoluble in water and, consequently, not suitable for incorporating in most glues. The sodium salt, which has a phenol coefficient of 21, is water soluble in all proportions and regardless of its high phenol coefficient is reported by bacteriological laboratories as being non-toxic to humans. Its remarkable preserving qualities combined with its non-toxicity makes it undoubtedly the most superior glue preservative on the present market.

The cost of treating glue with Dow Sodium Orthophenylphenate manufactured by Dow Chemical Company, Midland, Mich., on the basis of ⅛ of 1 per cent is said to be about one-half the cost of treating with beta naphthol and about one-tenth of the cost of treating with thymol.

Chas. A. Schieren Company, New York City, announces the opening of a complete factory branch at 504 Camp Street, New Orleans, La., under the management of Byron E. Dodd.

RHOADS TANNATE WATERSHED LEATHER BELTS

Speak for themselves on difficult paper mill drives

THEY soon show their exceptional qualities of durabilty, less stretch and stronger grip when tried out under heavy or irregular loads, and on short center drives at high pulley ratios.

A 14-inch double Tannate Belt put on a "pulper machine" in an eastern mill four years ago is still on and "shows no signs of wear." The previous belt, an 18-inch, 8-ply rubber, lasted only 2½ years and was unable to carry the load satisfactorily. Tannate has never failed to pull the load.

The superintendent is well pleased with this Tannate Belt, and with other Tannates in his mill. He remarked, "Tannate has never failed me on any drive." He is replacing all rubber belts with Tannate as new belts are needed.

For transmission economy you can depend on Rhoads Tannate Watershed Belting.

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STRUCTURES

SOUTHERN

To Study Pulpwood Marketing

H. W. Ellerson, well-known in the paper industry in Virginia, has been appointed chairman of a committee which will study the pulpwood marketing situation in the state and seek to provide an outlet for the large quantities of pulpwood, for which, due to foreign competition and depression in the paper industry, there is no sale.

The competition of Russian pulpwood is given as an important reason why Virginia pulpwood is not finding a market. Some Virginia counties have as much as $100,000 worth unsold, Mr. Ellerson stated.

From a report just issued by the American-Russian Chamber of Commerce, New York, it is shown that seventeen shiploads of Russian pulpwood was brought to America during the first part of August. Nine of these unloaded in New York, four at Portland, Me., one in Baltimore, one at Sorel, Quebec, one at Three Rivers, Quebec, and one at South Brewer, Me. The cargoes averaged about $50,000 each.

A Substitute for Wood That Takes Veneer or Finish

The February, 1930, issue of THE PAPER INDUSTRY contained a news item announcing the patenting of a process developed by Professor O. R. Sweeney of Iowa State College, Ames, Iowa, for the manufacture of synthetic lumber from cornstalks.

A variety of substances have been made from corn in the laboratory at Ames, and the State of Iowa has been granted patents under Dr. Sweeney's name for wood substitutes of various kinds. A new substance has been made recently by pressure under high temperature so that a wood veneer can be pressed into the surface or a bakelite finish which will take a polish, can be applied making the material useful for furniture, woodwork or any place that hardwood is used.

The royalties from Dr. Sweeney's patents are used by the State for aiding research work and for scholarships to students who will go into the study of the utilization of farm wastes. Dr. Sweeney believes that before many years all building materials will come from annual crops and chiefly farm wastes, instead of from forests which require many decades, even centuries to produce a single crop of raw material.

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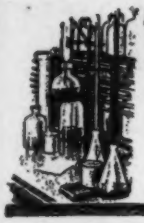
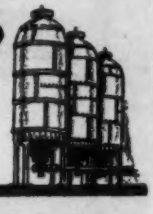


Technical Developments in the Paper Industry

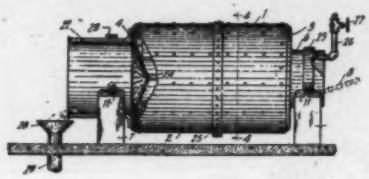


Domestic and Foreign

The following abstracts are of the latest developments found in the foreign press and the domestic and foreign patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

Pulping Machine

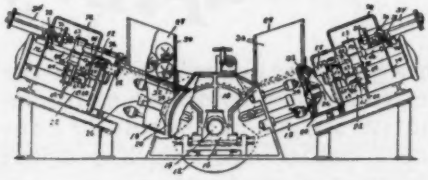
THE pulping machine consists of a horizontal drum which is rotable about a horizontal axis. This drum has imperforate sides and is provided at one end with a hollow shaft. The diameter of this shaft is such that it allows the entrance of large masses into the drum. Thus bales or laps of materials to be pulped are admitted in this manner. The



opposite end of the drum is perforated in a zone intermediate to the periphery and axis but imperforate throughout a zone of substantial width adjacent the periphery. The maximum diameter of the perforate zone exceeds the interior diameter of the hollow shaft. G. S. Witham, Jr., Hudson Falls, N. Y. United States Patent No. 1,759,385, filed Jan. 24, 1928.

Wood Pulp Grinding Machine

THE pressure element in the pocket of the grinder is able to move forwards and backwards within this pocket. A door controls communication between the hopper which is



connected with the pocket, and the latter. Means are controlled by the pressure element to operate this door and also means controlled by the door to operate the pressure element. In this manner automatic and regular feed is secured. W. A. Whitcomb, Dedham, Mass., assignor, Great Northern Paper Co. Millinocket, Me. United States Patent No. 1,757,031, filed Jan. 15, 1926.

Sizing Paper

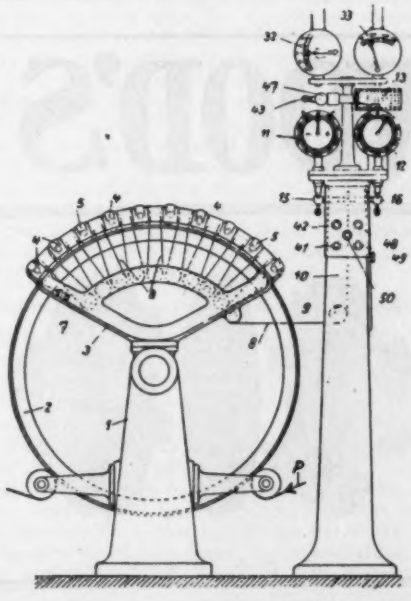
THIS method consists first in making the fibers astringent with a solution of sulphate of alumina. The solution that surrounds the fibers has a pH value of from 5 to 6.8. Then a sizing material is added. J. A. de Cew, Mount Vernon, N. Y., assignor, Process Engineers Inc., New York, N. Y. United State Patent No. 1,753,775, filed May 24, 1929.

Stock Loss on the Paper Machine and Water Requirements

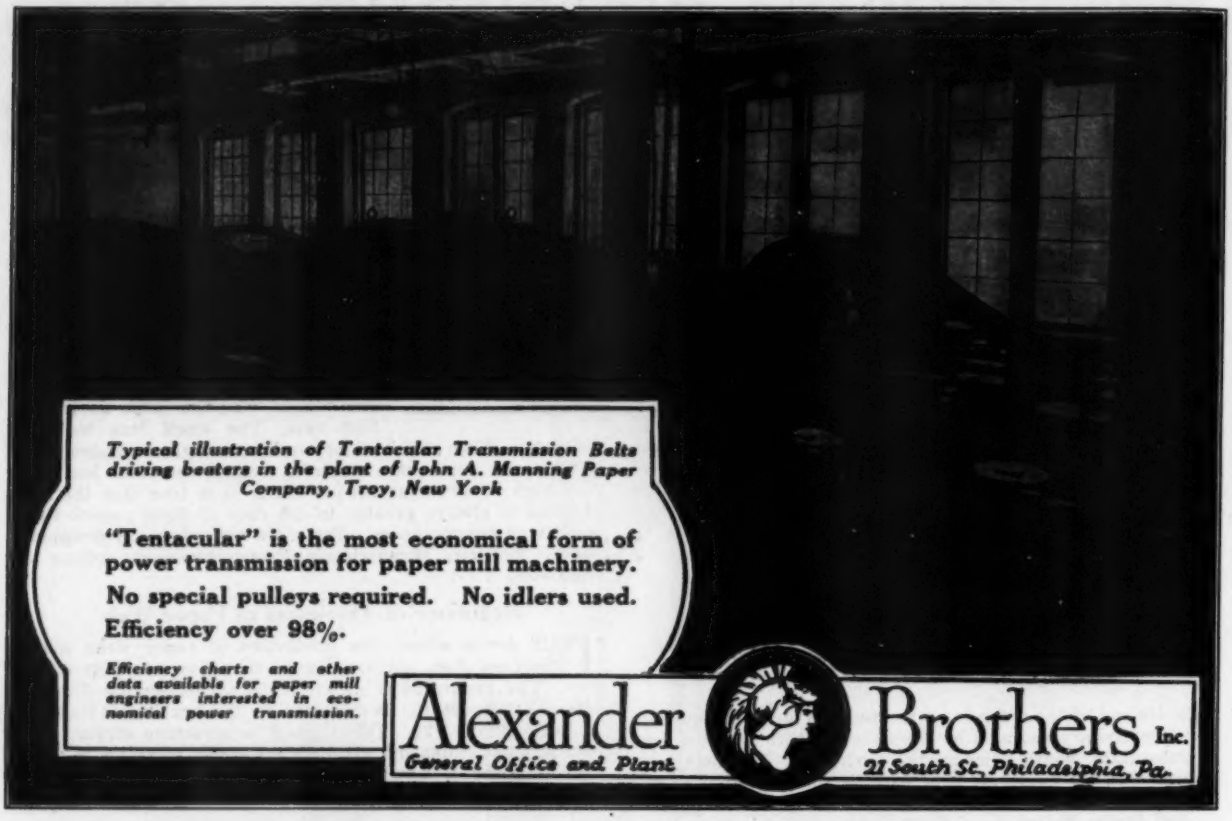
A NUMBER of thorough investigations were carried out on five different machines. In the case of a rag paper, the production of the machine was 2,500 kilograms per day of paper, weight 65 grams per square meter. The stock loss amounted to 1.34 per cent due to the fact that the recovery of backwater was not very efficacious. It appeared possible to reduce this to 0.8 per cent. The water requirements of 346 cubic meters per ton were quite high. In the second case the paper contained 65 per cent of rag stock. The weight was the same as in the first case. The stock loss was 2.7 per cent. When the machine worked on lighter papers, that is 22 grams per square meter in weight, the stock loss was very high being about ten per cent. It is true that the loss of stock is always greater in the case of light papers than in that of heavy papers. Tests are also given on wrapping paper. Fotijew, Bumaschnaja Promischlennost, volume 8, page 30ff.

Regulator of Thickness of Paper Web

THIS device allows the production of paper webs whose thickness does not vary more than five per cent either way. The apparatus is shown in the accompanying illustration. A support (3) is fastened to the bearing (1) of the cooling cylinder (2). This support or structure carries open bearings (4). Measuring rollers are easily rotatable in these bearings, one measuring roller (5) in each bearing. The



measuring rollers (5) rest their weights on the paper (P) which is led over the cylinder (2). A roll is connected with each of the rollers (5) in such a manner that the former can be easily rotated. Furthermore, suitable guide rollers are also arranged on the frame (3). These guide rollers are seen at (7). A measuring wire is carried over the aforementioned rolls and the guide rollers (7), the wire being seen at (8). This wire is fastened to the frame (3) at one end. The other end is led over a roller (9) into the interior of a stand (10), on which the measuring instruments (11) and (12) and a recording device (13) are arranged. The wire (8) acts on two levers (15) and (16), which move the effective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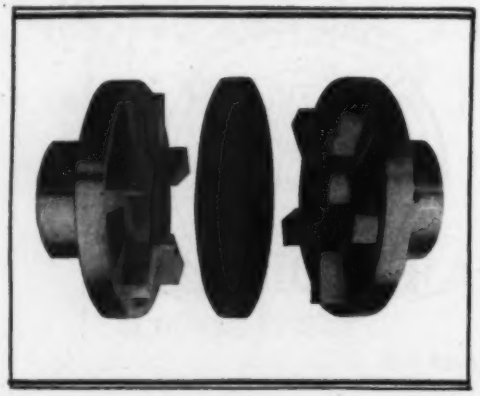

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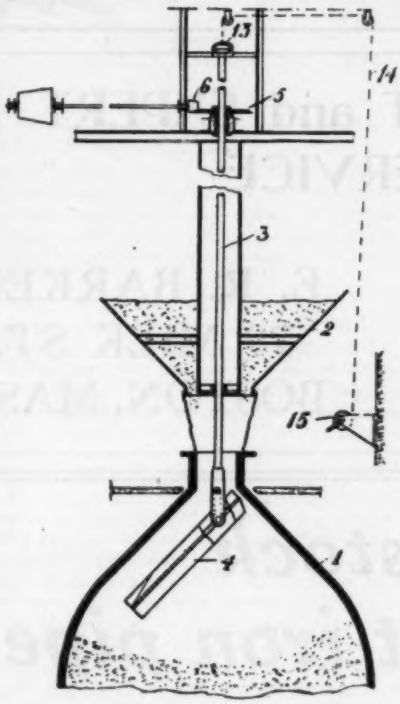
thickness measuring device (12) and the differential thickness measuring device (11). The transformation of the motion which is engendered by the varying thickness of the paper web is accomplished by means of ten measuring rollers and the levers (15) and (16). The instrument (12) which measures the effective thickness of the paper web is connected with a recording instrument (13).

A stock regulator is connected with the paper thickness regulator. The former is shown on the stand. A signal gong (47) is also provided. There is also a light signal (43). E. Stotz, Zurich, Switzerland. German Patent No. 492,477.

Filling or Charging Device for Digesters

THE shaft (3), as may be seen from the accompanying illustration, is located in the digester (1) in a coaxial position. At the lower end of this shaft is connected the guide channel (4). The shaft (3) is rotated by means of the gear



transmission (5) and (6). The comminuted wood, which is contained in the charging funnel (2), falls down into the digester and is caught by the channel (4) and is distributed in the digester in a circular manner by means of the rotation of the shaft (3).

A principal feature of the invention is the arrangement and shape of the guide channel (4). In order to be able to introduce the latter into the digester before the wood is allowed to enter, and in order to be able to take it out again after the digester has been charged with the wood, the guide channel must be made in such a manner that it is collapsible. It must be foldable together into such a small volume that it can be removed. Furthermore, the channel must be mounted flexibly on the end of the shaft (3), so that it may take the proper position during the charging operation to properly distribute the stock, and when the device is removed to be brought into a vertical position, so that it is easily passed through the neck of the digester. Raising or lowering of the shaft (3) is sufficient to enter or remove the guide channel (4) from the digester. This is accomplished by means of the rope (14) which is actuated by the rope drum (15).

The channel consists of two semi-cylindrical bodies (8) and (9) between which a sheet metal cross, stiffened by means of the supports (10) and (11) also made of sheet metal, is located. The lower sheet metal body (8) is longer in one end than the upper sheet metal body (9). The sheet metal cross-pieces (10) and (11) extend only over the length of the upper sheet metal body (9). The width of the channel may be increased by means of two side pieces (16), which are hinged to the main body of the channel, so that they can be swung in or out as the case may be. Thus while the apparatus is being removed from the digester, these end pieces are swung in close to the body of the channel, and when the apparatus is in the digester, then these end pieces are swung outwards. Tryggoe F. Christiansen, Helsingfors, German Patent No. 491,166.

Non-Dusting Offset Paper

THE causes of the complaint that offset paper "dusts" during use are of two kinds: one, insufficient adhesion of the filler to the paper fibers; two, dusting due to lifting off of the fibers in "hairy" papers. The desired adhesion of the filler to the fibers is obtained by the operations of sizing and beating. Sizing is carried out in the beater by means of rosin milk and aluminum sulphate. The suction to which the paper is subjected while it is being made is also highly important and this should not be too strong. When this is so, due to running the papermaking machine too rapidly, then the filler is drawn to the wire-side of the paper. The result is that the top side of the paper contains mostly coarsely granular filler while the wire-side contains mostly the fine particles of filler. The paper itself acts in the manner of a filter. The increased accumulation of filler on the wire-side of the paper easily leads to dusting.

The operation of beating has also an important relation to the dusting of the paper. Free beaten stock gives better results in that the paper is better able to hold the filler. Coarsely beaten stocks make papers which do not hold the fillers well. Certain disadvantages are encountered in using the free beaten stock due to the fact that the surface of the paper that is made with this pulp is not smooth.

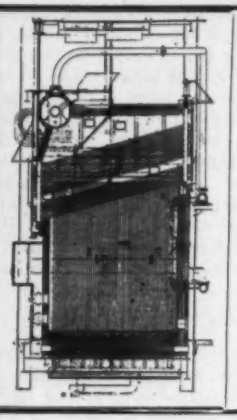
It is also pointed out that the dusting of offset paper is not always due to insufficient adhesion of the filler to the paper fibers. Dusting is, of course, not the correct expression for the phenomenon involved, as sometimes this is meant the lifting off of the pulp fibers from the surface of the paper. This condition has been assigned to the too strong heating of the first drying cylinders on the papermaking machine. This has the effect of allowing fibers on the surface of paper to remain loosely held. The temperature of these drying cylinders must be watched and best results have been obtained by the use of automatic controlling instruments. G. P. Mueller, Zellstoff und Papier, April, 1930, pages 245-6.

Some Notes on the Recovery of Soda

WHEN the plant in question is able to handle in proper manner the liquor that is sent to it, then the soda recovery will depend on the percentage of soda recovered and on the extent to which waste heat is utilized in order to obtain best results. The problem in question relates to the recovery of soda from waste liquors used for the manufacture of esparto pulp. Good results can only be obtained when the strength and volume of the black liquor are adequate. The factors that control these conditions are the amount of esparto grass furnished, the percentage of caustic used for cooking, the quality of the grass, the temperature and time of cooking and the volume of caustic soda liquor employed in digestion.

Details are given of the various steps in the digestion operation. The evaporation of the liquor is also discussed and attention is paid to such important factors as the temperature of the liquor entering the first effect, vigorous circulation, the maintenance of the highest possible temperature drop between the first and last effects and the divison of this drop as equally as possible between the various units. The use of the rotary evaporator is also considered, and good results are claimed to be predicated upon these conditions: good liquor, well regulated draft and regular cleaning.

Special attention is also paid to the causticizing operation in the process. J. A. Walker, The World's Paper Trade Review, 1930, pages 1209-1220.



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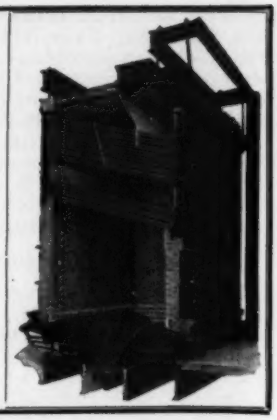

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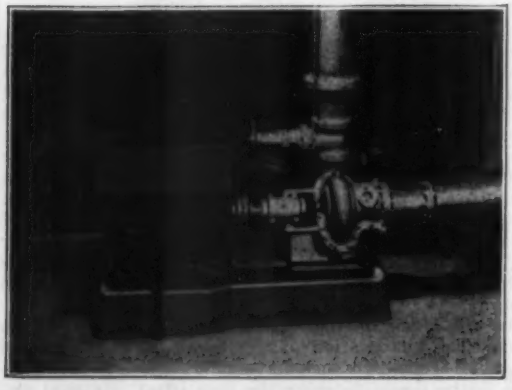

Installation of 10" x 8" Type "SSOR" Paper Stock Pump. A Type "S" Pump, Texrope driven, is shown in the background

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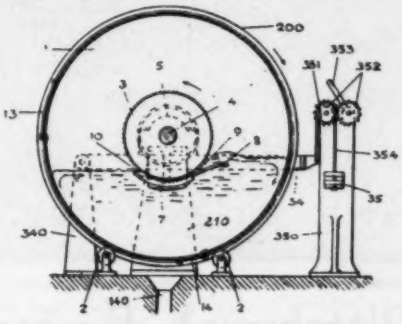
Paper Beater

THE illustration shows a cross-sectional view through a new type of beater. This type of beater differs from the ordinary types mainly in the fact that its trough (1) is made in the form of a drum with approximately horizontal axis. The drum is carried on rollers (2), which are supported



by blocks resting on the floor of the building. The drum carries a circumferential rail (200).

A beater roll (3) is located within the interior of the drum (1), which is rotatable. The beater roll possesses essentially the same characteristics as the beater roll in the ordinary type of beater. The beater roll (3) rests upon a horizontal shaft (4), which is provided with a belt pully for the rotation of the roll.

The bedplate (7) is located underneath the beater roll (3). The bedplate (7) must be brought into contact with the beater roll (3) in such a manner, that the intervening space (9) between the bedplate and the beater roll can be regulated according to the nature of the stock that is being beaten. The bedplate is supported by the columns (210) and the bearings (5) of the beater roll are carried on two levers (34). The ends of these levers are rotatably fixed to a column (340). The other ends of the levers are connected to a wire rope (354) or the like, which passes over a pulley (351) and is provided with a dead weight (35) at the lower end. The pulley (351) can be rotated by means of a crank (353) and the gears (352). The pillar (350) carries the pulley (351) and the gear transmission 352), and consequently the right end of the lever (34) and the beater roll (3). The beater roll (3) can be lowered or raised with respect to the bedplate (7), so as to adjust the intervening space between the beater roll and the bedplate in accordance with the character of the stock that is being beaten, by means of rotation of the pulley (351) with the aid of the crank (353).

The removable cover (13) in the jacket of the drum (1) serves for loading the latter, while a second removable cover (14) is provided for discharging the finished materials, which are led away through the outlet in the base of the apparatus shown at (140). R. Wendel, Stockholm, Sweden, German Patent No. 492,193.

Bark of Spruce, Pine and Red Beech

THE properties of the cambial layers of the three woods has been investigated with a view of formulating a simple process for the removal of the bark prior to pulping. Woods felled in spring and autumn have been examined and their chemical characteristics are differentiated. In the spring woods the cambial cells are soft and the bark is easily removed, the contrary being the case in the autumn woods, which are of the greatest practical interest. By means of acid hydrolysis, higher yields of sugar are obtained from the cambial layers of the coniferous woods than from the heartwood, indicating higher concentration of hemicelluloses. Tests for pentosans among the sugars produced by hydrolysis gave negative results, hexoses alone being found.

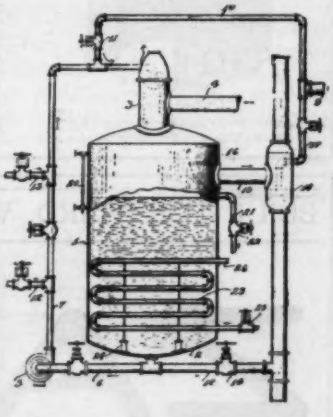
Similar treatment of the bark of the deciduous wood (beech) shows that the concentration of easily hydrolyzed hemicelluloses is lower than in the body of the tree, as is also the pentosan content. The hexosan content is even lower, both in the bark and the wood. It is accordingly held that the pentosans are very difficultly hydrolyzed, concentrated acids or alkalies being necessary. Treatment with lime and baryta water failed to affect the pentosan content of beech bark, but in the case of the wood the content was lowered, due to the presence in the pentosan complex of acid groupings of low molecular weight. Extraction with ether shows the bark of both classes to yield larger extracts than do the corresponding woods, the ratio being higher in beech, although the absolute quantity is lower. In order to attempt to trace the differences in character of the barks of the two types of wood, the saps flowing through the trees in spring were investigated, without positive result. C. G. Schwalbe and K. E. Neumann, Cellulosechemie, 1930, volume 11, pages 113-128.

Treating Waste Liquors

A PROCESS for recovering the sulphur dioxide and the sodium oxide contained in waste liquors obtained from digestion of wood consists in first treating these liquors with an alkaline earth base to produce sodium hydroxide, an organic-sodium compound and an insoluble alkaline earth metal sulphite. The liquors that are obtained in this manner are then treated with a bisulphite for the purpose of forming sodium sulphite. This compound is formed together with the precipitation of organic matter in the form of organic-metallic combinations corresponding to the bisulphites used. P. A. Barbou, assignor, Societe Barbou & Cie., Paris, France. United States Patent No. 1,749,557, filed April 5, 1927.

Water Heater for Pulp Mills

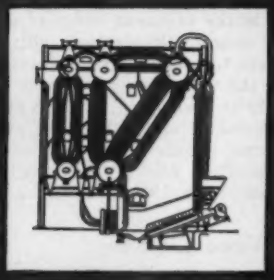
THE water heater, that is described hereinafter, is used as a heat economy apparatus in the manufacture of pulp. It is shown in the accompanying illustration. It consists of a tank with a mixing dome, the latter being shown at (16). Means are provided for introducing blow-off steam into the dome. An outside circulating system is also shown for drawing water from the bottom of the tank and introducing it into the top of the dome for the purpose of condensing the steam that enters the latter. The water is heated in this manner. Closed pipe coils are also provided in the apparatus for the purpose of heating the water circulating through these coils. A. G. Kernin, assignor, Mosinee Paper Mills Co., Mosinee, Wis. United States Patent No. 1,750,475, filed April 2, 1928.



Digestion of Pine Wood According to the Bisulphite Process

A FACT known to the pulp and paper chemist is that it is not possible to digest pine wood according to the process commonly employed on other conifers. A distinction must however, be made in this consideration between the heartwood and sapwood. The latter can be digested with good results, while the former cannot. In carrying out the digestion with the aid of bisulphite liquor, the yield of pulp is always dependent upon the proportion of heartwood present in the raw materials.

The author discusses the differences between heartwood and sapwood and how they can be detected. He also reviews the literature on the subject of penetration of the bisulphite liquor into the wood at increased pressure and temperature. He discusses the influence of the sodium hydroxide extraction process to which the wood may be preliminarily subjected on the bisulphite digestion. A series of investigations were carried out on this problem and pine wood was digested for two hours at a temperature of 105 degrees C. with sodium hydroxide liquors of different concentration. It was found that the sodium hydroxide treatment make the normal diges-



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tion with bisulphite liquor more difficult, and the difficulty is greater, the higher the concentration of the alkali in the liquor used. The sodium hydroxide which remains in the liquor after the preliminary treatment has the effect of considerably reducing in the subsequent bisulphite digestion the concentration of the hydrogen ions of the liquor present in the wood. The result is that the wood is only poorly digested.

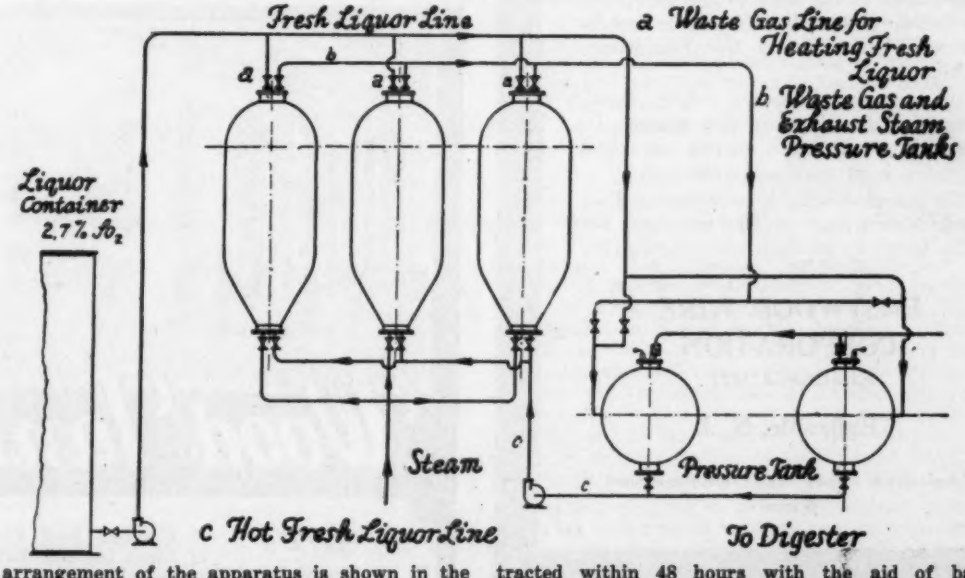
The effect of treatment of the wood with acid before digestion was also investigated. It is always possible that certain acids which do not themselves attack the cellulose fibers nevertheless exert a swelling action on them, with the result that the diffusion processes, which take place during the digestion of the wood in subsequent operation, are favored. Nevertheless negative results were obtained when the wood was preliminarily subjected to the action of acetic acid vapors.

The addition of sodium acetate to the extent of two per cent to the bisulphite liquors and its effects on the digestion were also discussed. It is held that the use of this chemical in the digestion process allows uniform digestion of heartwood and sapwood. The unfortunate part about the process is that the amount of sodium acetate required to accomplish this purpose is too high to be economical in technical practice. The amount is ten per cent on the weight of the wood. Reference is made to various authorities who have endeavored to explain the action of the acetate. A number of scientific investigations on heartwood, in which extracts were made with the aid of alcohol, ether and sodium hydroxide solution, are described. Dr. K. Berndt. Der Papier-Fabrikation, 1930, pages 313-319.

Technical Developments in Sulphite Manufacture

THIS article is an extract taken from a thesis written on the subject for a diploma in the Darmstadt Technical High School. It contains a very thorough discussion of the subject and is a critical examination of the technological developments in the manufacture of sulphite pulp that have taken place during the last few years.

A part of the article is devoted to a description of the heat recovery process used in the Zellstofffabrik Waldhof plant. The arrangement of the apparatus is shown in the accompanying illustration. It is a fact that a change in the initial temperature of the liquor can have a material effect in changing the total heat requirements of the process. The process which is used by the Waldhof concern allows more thorough utilization of the heat in the waste gases than has heretofore been practical. Inasmuch as the waste gas vapors reach the liquor tank with cooling, pressure tight tanks are required, which are advantageous, made in the spherical form. Details obtained in one installation of the process are as follows:


Fresh Liquor Line
a Waste Gas Line for Heating Fresh Liquor
b Waste Gas and Exhaust Steam Pressure Tanks
Liquor Container 2.7% SO_2
Steam
Pressure Tank
c Hot Fresh Liquor Line
To Digester

The tower liquor coming from the liquor preparation plant and containing about three per cent of sulphur dioxide and 0.98 per cent of lime at a temperature of 24 degrees C. is pumped into the upper liquor tank. This is accomplished by means of an injector and the liquor thus sucks up the hot sulphur dioxide gases while being heated up at the same time to about 35 degrees C., while the concentration of the liquor becomes 3.4 to 3.5 per cent. The liquor is then forced into closed tanks. The sulphur dioxide content of the liquor in the pressure tanks is increased to about 4.5 per cent and the temperature is raised to 60 degrees C., all this taking place at a pressure of about four atmospheres.

The waste gases from the digesters are carried over directly into the pressure tanks containing the liquor. The pressure under these conditions is about three atmospheres. Vapors are condensed. Thus the waste gases are not cooled prior to their entrance into the liquor tank but in spite of this fact the operation lasts about the same time as heretofore. The liquor is removed from the pressure tanks by means of a pump and fed into the digester. F. Mueller and P. Walter, Wochenblatt fuer Papierfabrikation, year 1930, pages 412-416.

Sulphite Digestion of Pine Wood

CERTAIN resinic acids, which are present in the turpentine derived from this wood and which are soluble in ether and also partially soluble in lime water and baryta water, have a disturbing influence on the sulphite digestion process. Only the heartwood seems to contain such resinic acids. Comparative digestion tests, which were carried out with magnesium bisulphite liquors, showed that the digestion liquor within the chips of wood had a different composition than the digestion liquor without. An increase in the basic part of the bisulphite is observed in the chips. It is probable that a portion of the base is combined with the strongly acidic resinic acids, whereby an insufficient amount of bisulphite ions is present. The content of base is particularly strongly increased, when heartwood from the lower part of the trunk near the roots is used. An investigation into the resinic acids of the heartwood and sapwood is also included in the article. The resinic acids, which are extracted within 48 hours with the aid of baryta water are precipitable with hydrochloric acid, whereby precipitation nevertheless takes place immediately only in the case of sapwood solutions. The solutions that are obtained from the heartwood remain milky for months long. The turpentine in the lower part of the trunk of the tree contains somewhat more volatile oily constituents, and the rosin in this turpentine contains resinic acids, which are only slightly soluble in sodium hydroxide liquor, and hence are such acids, which have a disturbing action on the sulphite digestion process. Ekenstam, Svensk Pappers-Tidning, Vol. 99, pg. 139.

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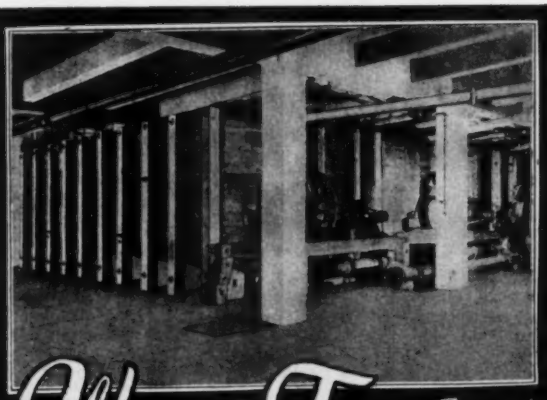

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New York, October 1, 1930.

IT is quite apparent that activity in the paper industry is on the gain. The improvement in manufacturing conditions and the expansion of demand for the various classes of paper are slow, but the fact that the situation is mending so gradually might be taken as an indication of its healthiness, and there are many within the industry whose opinions can be viewed as authoritative who are of the belief that the market will register improvement only in a gradual manner during the remainder of the year, although some expect to witness a marked broadening of trade in the next two or three months.

General industrial and business conditions are tending better, without a doubt. Whether the improvement thus far recorded is chiefly of seasonal variety, as usually registered at this time of the year, remains to be determined, but it is very evident that manufacturing is increasing, that merchandise is moving freer into wholesale channels, that retail buying is widening, and that the general situation is decidedly better than it was during the dull summer months. Naturally, the paper market is sharing in this improvement in general business. There is a more pronounced as well as broader call for paper supplies, with manufacturers and merchants alike reporting more demand, with manufacturers in some cases finding it necessary to step-up their production to keep pace with the increasing outflow of product, and with jobbers and distributors busier filling the requirements of consuming and converting customers, even though most of the present buying is still restricted to small lots of paper and board.

Everyone seems agreed that the worst of the period of depression has been seen, and that business in the United States is at least on the road to recovery. To what degree improvement will be noted in the next few months, or how long it will take for business to get back to where it can be called normal, are questions regarding which there is much diversity of opinion, but few there are who are in a position to judge who do not sincerely believe that better times are in the offing and that improvement will be experienced in the closing months of 1930.

Most assuredly it would appear as if the stage is all set for an appreciable expansion of trade activity, for a more voluminous call for manufactured and raw commodities, for a change for the better in the buying tactics of the American consuming public, and for greater stability in market prices of practically every article. It is no secret that consumers, converters, distributors and even manufacturers have permitted their stocks to get down to low levels; that they are proceeding with smaller inventories than have been known in a long time, and that an enormous amount of buying power has been stored up which, sooner or later, is bound to assert itself and make for much livelier commodity markets and general commercial improvement. Consumers are commencing to realize that nearly all danger is eliminated by prevailing commodity prices, and so soon as sentiment in this connection becomes a bit more crystallized, there seems little doubt there will be a wave of buying which will be felt in the far reaches of industry and which will effect substantial business improvement.

Latest issued statistics show that additional contraction occurred within the paper industry during the summer months, as customarily is the case. Production of paper in the United States in July reached a total of 468,582 net tons, as compared with 491,188 tons produced by identical mills in the preceding month, according to the monthly summary compiled by the American Paper and Pulp Association. The daily average of production in July showed a decrease of eight per cent under the preceding month, and a decline of 12 per cent as compared with the corresponding month last year. Also, production of all the major classes of paper during the first seven months of this year recorded a decrease as contrasted with the totals for the same period of 1929. Shipments of paper from mills during July aggregated 476,197 tons, which were in excess of the production in that month—a healthy sign—and compared with 487,799 tons shipped in June last. Stocks of paper at mills declined from a total of 294,476 tons of all grades at the end of June to 286,905 tons at the end of July.

Production of newsprint in the United States and Canada, totaling 303,644 tons for both countries in August, registered a decrease as compared with 319,818 tons produced in the preceding month, while shipments were 297,106 tons in August, against 312,529 tons in July, according to the News Print Service Bureau. Production in the U. S. in August was 101,601 tons and shipments were 99,236 tons, contrasted with 102,840 tons produced and 103,018 tons shipped in the preceding month, while Canadian mills produced 202,043 tons and shipped 197,870 tons in August, against 216,978 tons and 209,511 tons respectively in July. During August, 24,663 tons of newsprint were manufactured in Newfoundland and 862 tons in Mexico, so that the total North American output for the month amounted to 329,169 tons.

The Canadian mills produced 64,146 tons less newsprint in the first eight months of 1930 than in the same time last year, which was a decrease of four per cent. The United States output was 39,629 tons or four per cent less than in the first eight months of 1929; production in Newfoundland was 22,589 tons or 13 per cent more than last year, and in Mexico 3,059 tons less, making a total net decrease of 84,245 tons or three per cent. During August, the Canadian newsprint mills operated at 66.4 per cent of rated capacity, U. S. mills at 72 per cent and Newfoundland mills at 103 per cent. Stocks of newsprint at Canadian mills totaled 59,007 tons at the end of August and at U. S. mills 30,691 tons, making a combined total of 89,698 tons, which was equivalent to 5.2 days' average production.

Mills in the United States manufactured a total of 221,696 tons of paperboard in July, against 221,525 tons in the preceding month, and 244,318 tons in July, 1929, according to the summary of the board industry compiled by the U. S. Department of Commerce. Board production during the first seven months of the current year reached 1,615,911 tons, compared with 1,754,716 tons in the similar period a year ago. New orders received by mills in July called for 216,391 tons of board, against 221,526 tons in the preceding month, and unfilled orders held by manufacturers at the end of July were for 66,562 tons, contrasted with 58,866 tons a month earlier. Shipments of board from mills aggregated 222,335 tons in July, against 225,336 tons in June, while stocks at mills at the end of July totaled 72,412 tons, compared with 70,904 tons at the end of June.

Some talk of a cut in newsprint contract prices has been heard, but confirmation is lacking and mill quotations remain on previous levels. Consumption of print paper is on the rise, which should prove beneficial to the market situation. Fine papers are moving in better volume from an aggregate standpoint, though most buyers are still ordering principally in small lots. Wrapping paper is steady in demand and price, with a more stable tone marking quotations than in some while. Tissue is showing increased market activity, as are book papers, greaseproof, parchment, cover and specialty papers. Boxboard prices have taken a drop in the East, where plain chipboard and filled newsboard are being delivered in New York City on a basis of $27.50 per ton. Nevertheless the market for boards is broader than it was.

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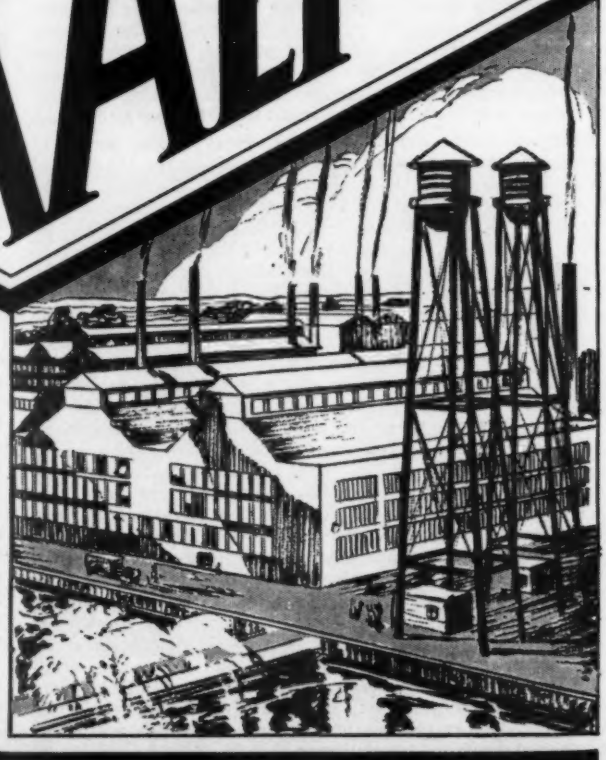

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Papermaking Rags

There appears to be a steadier, if not firmer, undercurrent in the papermaking rag market even though demand from consuming quarters for most grades is along narrow lines and of a character which ordinarily has scant influence on prices. Paper manufacturers with rare exceptions are buying only as their immediate needs dictate; there is, of course, a certain amount of routine purchasing, and occasionally buyers come into view to absorb fair quantities of some descriptions of rags, but as a general thing papermakers are buying in strict-hand-to-mouth fashion and permitting the future to take care of itself.

However, signs are that the supply condition is a factor helping to not only sustain market rates but to make for a somewhat steadier tone in prices. The low levels witnessed in the market for some while past have discouraged collections of rags all over the country, since little or no profit has been afforded collectors and dealers in handling rag stock, and then, too, production of rags—notably new cotton cuttings—has been on a decidedly small scale, owing to depression in the clothing manufacturing lines. Added to this is a marked decrease in importations of rags for papermaking in recent months, which also has diminished supplies and led to a reduction in domestic stocks in dealers' establishments. Prices prevailing in the United States market have been in numerous instances below those at primary sources abroad, with the result that importers have been unable to bring in rags from Europe at a profit, and consequently have refrained from importing except on a narrow scale pending a readjustment of market rates more in their favor.

It is a fact, so reports allege, that dealers are cautious, and becoming increasingly so, in booking orders from paper mills for rags of many grades. This does not mean that consumers are experiencing any difficulty getting the supplies wanted, because they are not, but dealers are not pressing sales by any means and are making sure of having the stock required or of knowing exactly where they can obtain it before entering commitments with mills. Furthermore, the situation seems fraught with a certain amount of danger from the buyer's standpoint, which is to say that there is little doubt were demand to broaden to any material degree, trouble would be encountered in locating increased amounts of most grades of rags and market prices would register considerable strengthening.

Some descriptions of new cuttings are reported scarce decidedly, with firm prices demanded. Dealers ask at least 8.25 to 8.50 cents a pound f.o.b. shipping points for No. 1 new white shirt cuttings, 6.75 cents for new light silesias, 5.75 cents for O. D. khaki cuttings, 5,25 cents for No. 1 washables, and 8.75 cents for new unbleached muslins. On the other hand, some other grades of cuttings are being bought at slight downward revisions in price. Old white cottons are quoted steadily at around 5.50 cents a pound at dealers' shipping points for No. 1 repacked and 2.75 cents for No. 2 repacked, while thirds and blues of repacked quality are held on a price level of 2.25 cents upward, depending on the packing.

Roofing rags exhibit a steadier undertone although actual market prices are unchanged. No. 1 domestic roofing stock is selling at about 1.15 cents per pound f.o.b. shipping points, and No. 2 packing at around 75 cents a hundred pounds. Foreign roofing stock, and imported rags in general, are in a lifeless market position, with little or no business of consequence transpiring and with sellers as well as buyers holding aloof. Indications are that papermakers are covering their wants at present, as they have for sometime, with domestic rags, and are ignoring foreign material. With so few sales recorded, prices of imported rags therefore are very uncertain, and are mainly nominal.

Average quotations f.o.b. shipping points and ex-dock New York are as follows:

New Stock—	New York and Chicago
White shirt cuttings, No. 1	8.25– 8.75
White shirt cuttings, No. 2	6.50– 6.75
Fancy shirt cuttings	5.25– 5.50
Washables, No. 1	5.25– 5.50
Unbleached muslins	8.75– 9.00
White lawns	7.50– 7.75
Overall cuttings, blue	6.50– 6.75
Black silesias	4.50– 4.75
Canton flannels, bleached	8.25– 8.50
Canton flannels, unbleached	7.25– 7.50
Shoe cuttings, bleached	6.50– 6.75
Shoe cuttings, unbleached	5.25– 5.50
Light silesias	6.75– 7.00
O. D. Khaki cuttings	5.75– 6.00
Mixed khaki cuttings	4.75– 5.00
Corduroy cuttings	3.25– 3.50
Cottonade cuttings	3.00– 3.25
Linens, No. 1 white, foreign	13.50–14.50
Light prints, foreign	3.75– 4.00
Old Stock—	
Whites, No. 1, repacked	5.00– 6.00
Whites, No. 2, repacked	2.50– 3.00
Whites, house soiled	2.00– 2.25
Whites, street soiled	1.75– 2.00
Thirds and blues, rough	1.25– 1.50
Thirds and blues, repacked	2.25– 2.50
Lace curtains	4.50– 4.75
Black stockings	4.10– 4.25
Cotton canvas, No. 1	4.00– 4.25
White cotton batting	1.75– 2.00
Roofing, No. 1 (cloth strippings)	1.10– 1.20
Roofing, No. 2	.70– .80
Linsey garments, foreign	1.15– 1.25
Dark colored cottons, foreign	.90– 1.00
Blue linens, foreign	3.00– 3.50
Gray linens, foreign	3.00– 4.00
White linens, foreign	6.50– 7.00
Light prints, extra foreign	1.75– 2.00

Rope and Bagging

Paper mills using old rope apparently are fairly well stocked with this raw material and are resorting to limited additional buying at present, so that a quiet market exists. However, a more or less consistent call for supplies keeps up from those consumers who are absorbing old rope through regular channels, and dealers contend that the real factor in the market now is not demand but the exceedingly small supplies of old rope, more especially good-quality rope, that are reaching the market. Domestic No. 1 old manila is fetching in the vicinity of 3.25 cents a pound to slightly higher f.o.b. shipping points, with some mills reported paying 3.50 cents to regular suppliers, while No. 1 foreign old rope is on a price basis of 3 to 3.25 cents a pound ex dock American Atlantic ports.

Scrap bagging demand is fair, and evidently ample to remove practically all the material coming onto the market. No. 1 scrap burlap is selling at 1.50 cents to perhaps a little higher per pound at dealers' points, and roofing bagging at 60 to 65 cents a hundred pounds. In bagging, too, dealers claim that production is small, and that any widening of

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consuming demand would promote an immediate firming of market rates.

F.O.B. shipping point and ex dock New York quotations follow:

	New York and Chicago
Gunny, No. 1 domestic	1.50– 1.60
Gunny, No. 1 foreign	1.45– 1.55
Scrap bagging, No. 1	1.50– 1.60
Roofing bagging	.60– .65
Wool tares, heavy	1.65– 1.75
Wool tares, light	1.55– 1.65
Manila rope, No. 1 foreign	3.00– 3.25
Manila rope, No. 1 domestic	3.25– 3.50
Sisal strings	1.75– 2.00
Mixed strings	.75– .90

Old Paper

Some grades of old paper are reported hard to get in normal volume and to be favored with an excellent demand from consuming quarters. Other grades are in moderate call only and are simply maintaining their price position, while still others are rather under neglect of board and paper manufacturers and are tending off in value. Strength is noted in white shavings, old kraft paper, and certain of the so-called specialty grades. Hard white shavings of No. 1 quality are bringing 2.60 to 3 cents a pound f.o.b. dealers' shipping points, according to the packing; No. 1 hard white envelope cuttings are firm at around 3 cents a pound, and No. 1 soft white shavings are selling at 2.35 to 2.50 cents for ordinary packing and as high as 2.75 cents for one-cut quality. Old No. 1 kraft is moving freely on a price basis of around 1.35 cents per pound, and new manila envelope cuttings are reported readily selling at 1.90 cents and higher per pound.

Book stock is in slow call and easy in price, with No. 1 heavy books reported available to mills at 80 cents a hundred pounds in the East, and crumpled books at 65 cents. Folded news is selling at 35 cents upwards per hundred pounds, and No. 1 mixed paper at 25 cents, these being about the low prices quoted in the East, with Middle West dealers asking higher.

The following are quotations named by dealers f.o.b. shipping points:

	New York and Chicago
Hard white shavings, No. 1	2.60– 3.00
Hard white shavings, No. 2	2.35– 2.60
Soft white shavings	2.35– 2.75
Colored shavings	.70– .80
Heavy book, No. 1	.80– .90
Crumpled book, No. 1	.65– .75
Ledger stock	.70– 1.20
Kraft No. 1	1.30– 1.40
New kraft cuttings	1.80– 2.00
White blank news	1.70– 1.80
Manilas, No. 1	.45– .60
Manilas, container	.30– .35
Folded news	.35– .50
Sulphite mill wrappings	.50– .60
Old corrugated boxes	.40– .45
New corrugated box cuttings	.50– .55
Mixed paper, No. 1	.25– .35
Common paper	(Nominal)

Pulpwood

Open-market trading in pulpwood is at a low ebb, but the contract movement keeps up in steady fashion, and the market is devoid of important or interesting changes of any kind. Canada's exports of pulpwood have shown an increase this year over last year, totaling 957,496 cords of a declared value of $9,698,863 in the first eight months of 1930, against 933,297 cords of a value of $9,340,714 in the same time of 1929, all of which came to the United States.

Mechanical Pulp

Mechanical pulp prices are adhering to steady levels notwithstanding a rather restricted demand from consuming

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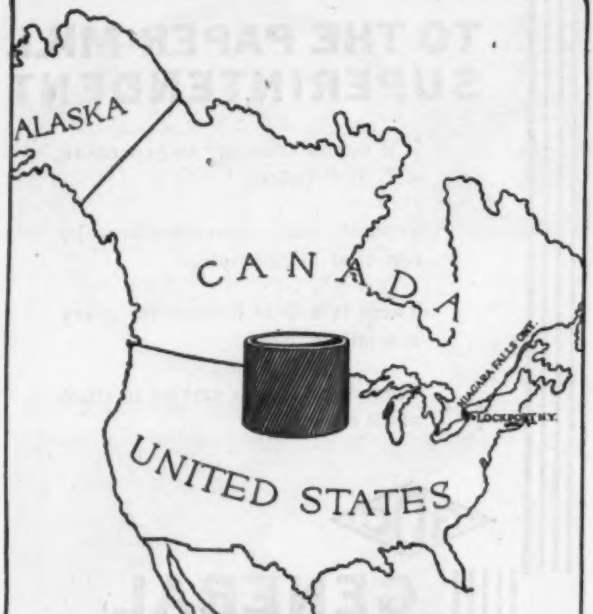

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We have been licensed by Mr. M. J. Mackay, the inventor of KaRollTex wires, to use his process.

This process has now been improved and perfected and we are equipped to supply Rolled wires to the trade.

Actual tests show that this process INCREASES THE LIFE OF THE WIRES because it INCREASES THE TENSILE STRENGTH.

INCREASES ITS RESISTANCE TO FATIGUE OR BENDING.

ELIMINATES OR DECREASES WIRE MARK IN THE SHEET.

ELIMINATES SCORING AND CLINGING TO THE BOXES.

It is THE ONLY WIRE WITH A PERFECT SURFACE.

The surface is absolutely smooth and uniform so that YOU CAN MAKE A UNIFORM SHEET OF PAPER.

Use Wisconsin Rolled Wires and IMPROVE YOUR SHEET and SAVE MONEY.

WISCONSIN WIRE WORKS

Appleton — Wisconsin

100 Tons Kraft Per Day—
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Kamyr Wet Machine

PRODUCTION . . . .

Kraft	up to	100 Tons
Sulphite	up to	80 Tons
Soda	up to	60 Tons
Groundwood	up to	50 Tons

RESULTS . . . . . .

With 1 Press	42% A.D.
With 2 Presses	55% A.D.
With 2 Presses & Predryer	58% A.D.

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Upkeep, Power, Fibre
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sources. In fact, it is stated that groundwood is displaying greater price firmness—as it has for sometime—than chemical wood pulp, one salient reason for this being that sellers are not pressing to sell the former. Contract shipments are keeping up in a steady way, and apparently are taking most of the production of domestic and Canadian grinders who in some cases have been handicapped recently in their manufacturing operations by low water in mill streams.

Domestic groundwood is quoted at about $28 or $29 a ton f.o.b. pulp plants, while Canadian groundwood is selling to American consumers at from $25 a ton upwards at producing points, depending on the haul to consuming centers and the air dry test. Production of groundwood in the United States in July amounted to 69,201 net tons, against 90,348 tons in the preceding month, according to identical mill reports to the American Paper and Pulp Association, while mill stocks declined from a total of 103,541 tons at the end of June to 94,245 tons at the end of July. Producing mills consumed 77,555 tons in July, which was in excess of the amount produced during that month. These figures would seem to indicate in part why groundwood is in a firm quotable position.

Chemical Pulp

A somewhat steadier price undertone seems to have developed in the chemical wood pulp market. Demand is still on a limited scale, consumers with few exceptions buying only when obliged to by urgent requirements, but prices have worked down to levels where greater resistance is shown to any further decline and to where producers are not so eager to make commitments involving sizeable amounts of pulp, with selling pressure thus considerably lessened. Not much additional change in quoted rates has been recorded during the last month, and it would appear as if market values are now resting on the bottom with little likelihood of any further recession of note.

Bleached sulphite is variously quoted on a wide range of from about 2.85 cents a pound ex dock American Atlantic seaboard for Pacific Coast pulp of this description to as high as 4.75 cents for some extra desirable grades of bleached sulphite of domestic manufacture. No. 1 strong unbleached sulphite is about 2.25 cents a pound f.o.b. pulp mills for newsprint quality and 2.50 cents and higher for book grades. Bleached soda pulp is quoted at around 3.25 cents a pound delivered paper mills, and domestic kraft pulp on a broad range of 1.90 to 2.75 cents per pound at pulp plants.

Production of chemical wood pulp in the United States in July amounted to 109,627 net tons, against 118,241 tons in June, while stocks at producing mills totaled 25,291 tons at the end of July, compared with 26,322 tons a month earlier, according to the American Paper and Pulp Association.

Quotations f.o.b. pulp mills are as follows:

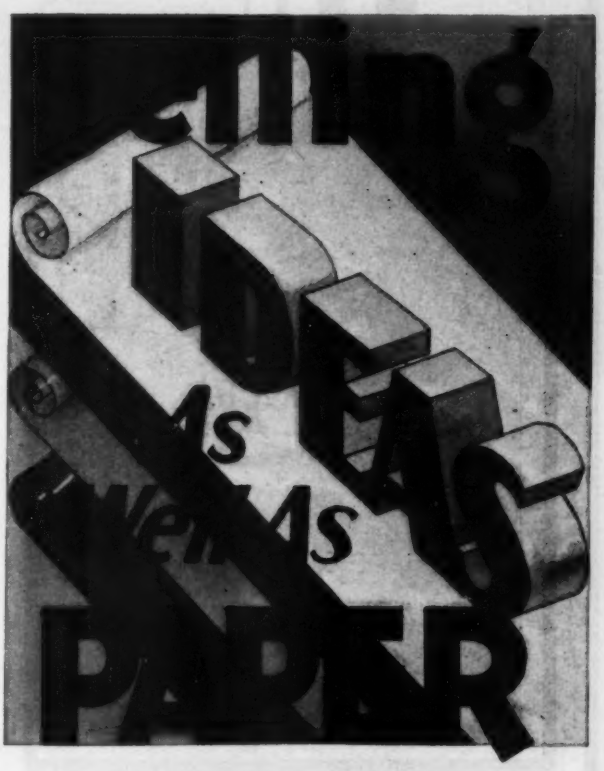
Bleached sulphite	2.85–4.75
Easy bleaching sulphite	2.50–2.75
Unbleached sulphite, No. 1 strong (news grade)	2.25–2.50
Unbleached sulphite, No. 1 book	2.50–2.75
Soda pulp bleached (delivered)	3.20–3.40
Mitscherlich, unbleached	3.00–3.25
Kraft, No. 1	1.90–2.75
Screenings, refined	(Nominal)

Chemicals

Slightly lower quotations are reported on casein, with domestic casein now available at 12.50 cents a pound for some grades and the Argentine product at 13.50 cents, duty paid, though with above these prices asked for finely ground qualities. Prices of caustic soda are steady at 3.30 cents a pound for ground f.o.b. works, while soda ash quotations are unchanged on a basis of 1.32½ cents a pound for the 58 per cent light product packed in bags f.o.b. works.

Average quotations are as follows:

Alum, lump ammonia	3.50 – 3.75
Alum, lump starch	3.75 – 4.00
Blanc fixe, powdered	3.75 – 4.00
Bleaching powder	2.00 – 2.35
Brimstone (long ton, at mine)	18.00 –20.00
Casein (duty paid)	12.50 –15.00



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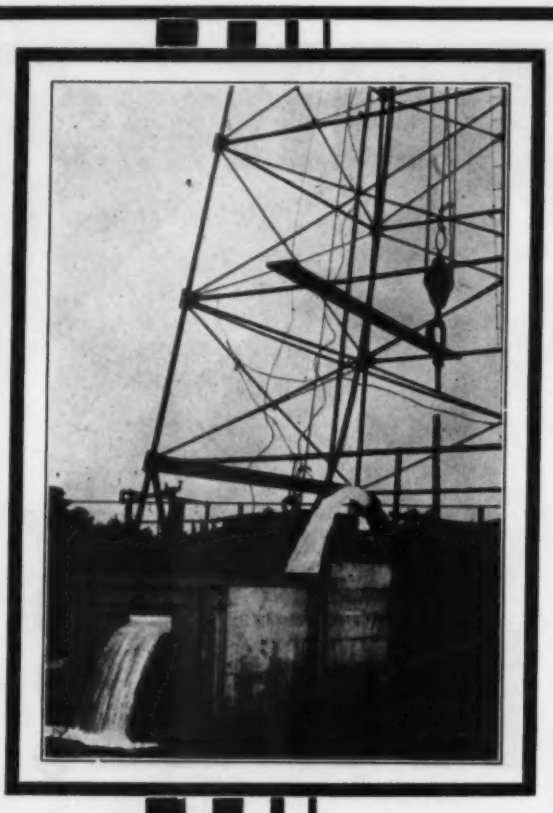
VEGETABLE PARCHMENT CO.
KALAMAZOO -- MICHIGAN



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The Trimbey WEIGHT REGULATING STUFF BOX

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TRIMBEY MACHINE WORKS

Glens Falls, N. Y. Also "Made in Canada"

Makers of
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Pulp Screens
Consistency Regulators
Pulp Meters
Float Valves

New Papers

Writing—	
White rag	15–40
White sulphite	9–30
Colored rag	15–40
Colored sulphite	8–30
Ledger—	
White rag	16–40
Colored sulphite	10–30
Colored sulphite	8–30
Colored rag	15–40
Bond—	
White rag	16–40
White sulphite	8–30
Colored sulphite	8–30
Colored rag	15–40
Book—	
No. 1 S. & S. C.	5.75– 8.00
Machine finished	5.50– 8.00
English finish	5.50– 8.00
Coated and enameled	7.50–12.00
Lithograph, M. F.	7.50–12.00
Newsprint—	
Rolls, contract, per ton, delivered New York..	62.00–
Rolls, transient, per ton, delivered New York..	62.00–
Sheets, per ton, delivered New York	67.00–
Side runs, per ton, delivered New York	47.00–52.00
Cover Stock—	
Coated, both sides	–10.25
Coated, one side	–10.15
Tissue—	
No. 1 white, 20x30	.75– .90
No. 2 white, 24x36	.75– .90
No. 1 Manila, 24x36	.75– .80
Kraft	.95– 1.10
Wrapping—	
No. 1 kraft	5.75– 6.25
No. 2 kraft	3.50– 4.50
Southern kraft	3.50– 4.00

Boards—	New York and Chicago
Solid news	32.50–35.00
Straw	45.00–50.00
Plain Chip	27.50–30.00
White coated chip	45.00–50.00
Manila coated chip	40.00–45.00
Binders' board	65.00–70.00

Chemicals

(Continued from page 1297)

Caustic soda, spot delivery	3.30 – 3.35
China clay, domestic washed	8.00 –13.00
China clay, foreign	15.00 –21.00
Rosin, Grade E	6.20 – 6.25
Satin white	2.00 – 2.25
Soda ash, 58 per cent light (bags)	1.32½–.....
Starch, papermakers', in bags	3.77 –.....
Talc (ton)	16.00 –18.00

Waste Paper Institute Organized

The Waste Paper Institute, a national organization of dealers and packers of waste paper was organized at a meeting of the industry September 10, at the Palmer House, Chicago, with 95 per cent of the firms represented signing up as members. The executive committee was authorized to apply to the Federal Trade Commission for a Trade Practice Conference of the industry, at which time a Code of Business Practices will be submitted by the industry to the Commission. Arrangements were also made to call a meeting of dealers and packers in the East, on October 10, in New York, for the purpose of creating an eastern division of the institute.

The objects of the institute, as outlined by Benjamin Schwartz, director general of the Institute of Scrap Iron and Steel, who had been invited to address the conference, are the following: The elimination of unfair trade practices, education in costs, improving the service of the industry and eliminating waste and duplication, co-operating with the producers of waste paper and the paper mills that consume waste paper as a raw material, establishing wider uses and a freer distribution of waste paper, and engaging in other research and co-operative activities for the improvement of the industry.

Virginia Dumps "Bad Business" into the Sea

With fitting ceremonies and in the presence of a large number of business men, a sea burial was held at Norfolk, Va., September 11, at which time old man "Business Depression," his wife, "Mrs. Pessimism," and his daughter, "Miss Fortune" were consigned to the deep. The execution took place on a steamship chartered for a good will tour of Virginia business men.

Regular coffins and the usual rites for burial at sea were employed in consigning three dummies, representing the evils to the deep.

Governor Pollard delivered the funeral oration at this strange burial, and presented to his hearers substitutes for the departed, the outstanding figure being "Lady Optimism."

Sherman Corp. to Aid State Merchants

The Sherman Corporation, well-known business engineers, has been retained by the Illinois Chamber of Commerce to aid in developing advanced principles of merchandising among its members.

The Illinois Chamber in taking this step, has adopted the broad policy of leading banks and commercial organizations in serving industries in a constructive manner by showing the way to the establishment of the most progressive principles of industrial management.

This move was made after engineers of the Sherman Corporation had served industries controlled by a number of leading members of the Illinois chamber. The Sherman Corporation's main office is at 31 Milk street, Boston; the Chicago office at 8 South Michigan avenue.

Carl Maglathlin formerly general manager of the Lindsay Paper Company, Philadelphia, has joined the Seaman Paper Company at its New York office, it was announced by George M. Seaman. The change was effective September 16. Mr. Maglathlin will represent the Seaman Company which recently withdrew from the paper merchandising business to further stress its direct representation of paper mills, in the eastern states.

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Kellner-Partington Paper Pulp Co. Ltd.
Sarpsborg, Norway—Edsvalla, Sweden
Hallein and Villach, Austria

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Cellulosefabriks A.—G., Bratislava, Cecho-Slovakei
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Svanö Aktiebolag, Svanö, Sweden
Aktieselskabet Greaker Cellulosefabrik, Greaker Norway

KRAFT PULP

Nensjö Cellulosa A.—B., Sprängsviken, Sweden
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Munksunds Aktiebolag, Munksund, Sweden
Kalix Träindustri Aktiebolag, Vanafjärden, Sweden

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THREE RIVERS, CANADA

Sulphite Pulp—Paper and Board
J. & J. Rogers Co.
Ausable Forks, N. Y.

Bleached Sulphite—Bleached Soda Pulp
Howard Smith Paper Mills, Ltd.
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Selling Agents **THE PULP & PAPER TRADING CO.**
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The B.C. **QUALITY PULPS**

"HAFSLUND BEAR"
Bleached Sulphite

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Extra Strong Kraft

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EXPORTS

Exportations of paper and paper products from the United States recorded a further decrease in point of value during July, when shipments out of the country were below the exports in the preceding month and also under the exports in the similar month last year. According to official statistics issued by the U. S. Department of Commerce in Washington, total paper exports in July last reached a value of $2,412,479, compared with $2,483,664 in June of this year, and $3,141,868 in July, 1929. The July shipments brought the aggregate for the first seven months of this year up to $19,135,368, against exports valued at $21,972,135 in the corresponding period a year ago.

Newsprint shipments during July amounted to 1,276,173 pounds of a value of $50,507, contrasted with 1,915,963 pounds of a value of $79,160 in the preceding month, and 2,588,222 pounds of a declared value of $105,795 in the same month last year. Uncoated book paper exports were 1,904,401 pounds, valued at $128,601, in July, compared with 3,279,804 pounds of a value of $245,039 in the same month last year. Exports of wrapping paper in July were valued at $222,456, against $240,517 in the similar month a year ago, while writing paper shipments declined from a value of $231,658 in July, 1929, to $155,142 in the same month this year. Tissue and crepe paper exports in July reached a value of $87,420 last July, against $96,986 a year ago.

Exports of boxboard, of paperboard and strawboard were valued at $151,281 in July, contrasted with $145,215 in the similar month in 1929, whereas shipments of other paperboard declined in value from $178,735 in July last year to $135,730 last July.

IMPORTS

Wood Pulp

It would appear as if market prices of imported wood pulp are resting on the bottom of the decline seen this year. There is a steadier undertone, no further recessions of much account have been registered during the past month, sellers are becoming much more reserved in their policy, and buyers of pulp seem to be experiencing increasing difficulty in any efforts they may be making to break through certain fairly well defined price levels. Moreover, signs point to a firmer statistical condition in process of development. There is plenty of pulp available—perhaps something of a market surplus still exists—but production is being curtailed to some extent at primary sources abroad, and foreign producers are not so eager to effect sales to the United States at the prices obtaining as they were. Furthermore, there seems scant doubt that stocks of unsold imported pulp in the United States are decreasing, that buyers are steadily though slowly absorbing these supplies and that dock and warehouse holdings now are substantially smaller than several months ago.

Consumers themselves are in numerous instances ready to acknowledge that prices of imported pulp are on favorably low levels. Yet, this is not prompting many of them to buy ahead in any important tonnage. Here and there a paper or board manufacturer is contracting for 1931 shipments from abroad, but buying at present is of cautious character and is mostly confined to actually and directly needed supplies. Thus, a fair demand for spot pulp prevails, and owners of stocks held in this country are gradually diminishing the tonnage which was piled up on the Atlantic seaboard of the U. S. early in the year.

Imports into the United States are running only about normal, judging from the latest official figures available.

During July, total importations of chemical pulp reached 98,448 long tons, of a declared value of $5,495,555, compared with 115,022 tons imported in the preceding month, and 143,915 tons of a declared value of $8,182,448 in July, 1929, according to U. S. Department of Commerce statistics. The total imports of chemical pulp in the first seven months of the current year amounted to 789,361 long tons, giving a monthly average of 112,765 tons, showing a decrease as compared with a total of 815,806 tons or a monthly average of 116,543 tons in the corresponding period of last year.

Groundwood imports in July were 15,345 long tons, valued at $431,662, against 16,308 tons in the preceding month, and 16,718 tons in the similar month of 1929, making a total for the first seven months of this year of 150,334 long tons, valued at $4,204,821, contrasted with 128,246 tons of a declared value of $3,254,831 imported in the same period last year.

A stiffening tendency is reported in prices of Scandinavian kraft wood pulp. Most importers and agents in New York ask 1.70 or 1.75 cents per pound ex dock American Atlantic ports for prime Swedish kraft, though it is said purchases are still possible down to 1.60 and 1.65 cents. Foreign bleached sulphite is quoted from 3 cents upwards per pound ex dock Atlantic seaboard, with some grades held at as high as 4 and 4.25 cents. Strong unbleached sulphite is quoted at 2.20 to 2.25 cents a pound ex dock, prime easy bleaching sulphite at 2.50 cents, and ordinary Mitscherlich unbleached sulphite at 2.25 cents. Foreign groundwood is on a price basis of $32 per short ton for dry and $31 for moist, ex dock New York or other American Atlantic ports.

Current market quotations ex dock New York, and receipts at the port of New York during September, 1930, follow:

Bleached sulphite, No. 1	3.00– 4.25
Unbleached sulphite, strong No. 1	2.20– 2.35
Unbleached sulphite, No. 2	2.10– 2.25
Easy bleaching sulphite	2.50– 2.65
Mitscherlich unbleached, genuine	2.75– 3.00
Mitscherlich unbleached, ordinary	2.25– 2.40
Kraft, standard Swedish	1.60– 1.85
Groundwood, per ton (dry)	32.00–33.00

E. M. Sergeant Co., 150 bls. from Oslo and 1,827 bls. Gothenburg; Castle & Overton, 4,413 bls. from Hamburg and 340 bls. Rotterdam; Price & Pierce, Ltd., 1,800 bls. from Wallvik and 250 bls. Gothenburg; Pagel, Horton & Co., 1,500 bls. from Hornefors and 3,500 bls. Gefle; Stora Kopparberg Corp., 775 bls. from Skutskar; Bulkley, Dunton & Co., 4,525 bls. from Stugsund, 125 bls. Bremen and 750 bls. Iggesund; M. Gottesman & Co., 900 bls. from Gothenburg, 900 bls. Stockholm and 750 bls. Iggesund; Kidder, Peabody & Co., 345 bls. from Gothenburg; Chemical Bank & Trust Co., 175 bls. from Oslo; Johaneson, Wales & Sparre, 210 bls. from Oslo, 502 bls. Hamburg, 180 bls. Wifstavarf and 2,910 bls. Gothenburg; Norwegian-American Line, 2,000 bls. from Oslo; Scandinavian Pulp Agency, 250 bls. from Wifstavarf; Guaranty Trust Co., 1,100 bls. from Wifstavarf; E. J. Keller Co., 1,118 bls. from Hamburg; Parsons & Whittemore, 2,760 bls. from Gothenburg and 150 bls. Wifstavarf; National City Bank, 559 bls. from Hamburg; Harriman Bros., 902 bls. from Hamburg; Order, 739 bls. from Hamburg, 300 bls. Gothenburg, 300 bls. Stockholm and 6,450 bls. Hernosand. PULPWOOD—Chase National Bank 24,182 cords from Archangel; Polarus Shipping Co., 1,191 cords from St. Peters, Can.; Order, 2,918 cords from Archangel.

Paper Stock

Importations of rags and other classes of paper stock into the United States continue on the short side, according to the latest official figures available. During July, imports of papermaking rags amounted to 18,525,668 pounds, valued at $421,875, compared with 41,387,217 pounds of a value of

M&M Shredders are designed and built to handle practically every kind of paper stock—including kraft, sheet sulphite, machine broke, lap and roll stock, and old books and magazines.

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" Fine Screens
" Continuous Filters, Pulp Washers, Thickeners and Save-Alls.
" Rotary Sulphur Burners
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American Paper Machinery and Engineering Works

GLENS FALLS, NEW YORK

Canadian Manufacturer—Paper Mill Equipment, Ltd., 413 Drummond Building, Montreal, Que.
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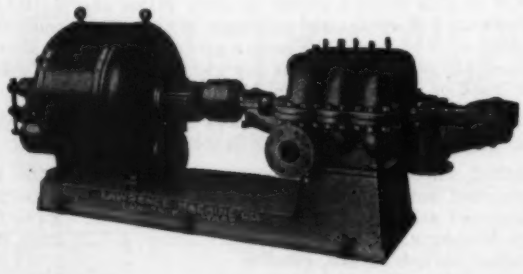

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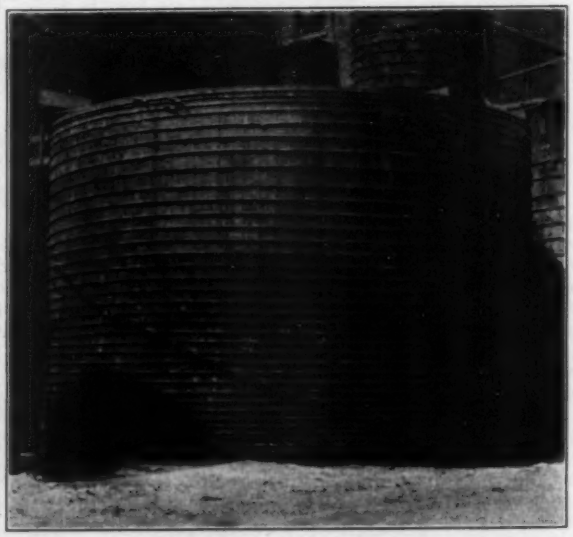
WOOD TANKS TILE



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Tank Builders Since 1867

KALAMAZOO TANK AND SILO CO.

KALAMAZOO, MICHIGAN

$862,276 in the similar month last year, while imports during the first seven months of this year totaled 208,329,622 pounds, valued at $4,363,772, against 253,117,061 pounds of a value of $5,130,634 imported in the corresponding period of 1929, according to U. S. Department of Commerce statistics. Imports of all other paper stock during the first seven months of the current year amounted to 162,537,150 pounds, valued at $2,240,706, against 159,314,239 pounds of a value of $3,200,758 in the same time last year.

September imports continued rather light, judging from receipts through the port of New York. Arrivals of all kinds of paper stock excepting wood pulp at the port of New York last month, these data being taken from manifests of steamers reaching New York during September, were as follows:

Old Rope—Darmstadt, Scott & Courtney, 48 coils; Brown Bros. & Co., 186 coils; International Purchasing Co., 369 coils; Bull Insular Line, 7 bls.; International Trust Co., 161 bls.; Irving Trust Co., 47 bls.; Order, 173 coils and 145 bls.

Old Bagging—E. Butterworth & Co., 67 bls.; Darmstadt, Scott & Courtney, 138 bls.; Banca Commerciale Italiana Trust Co., 1,016 bls.; R. F. Downing & Co., 202 bls.; Van Oppen & Co., 226 bls.; Marine Trust Co., 50 bls.; Guaranty Trust Co., 26 bls.; Chase National Bank, 176 bls.; E. J. Keller Co., 80 bls.; Castle & Overton, 277 bls.

Rags—E. J. Keller Co., 921 bls.; J. Cohen & Sons, 13 bls.; J. Reiss & Co., 11 bls.; Castle & Overton, 156 bls.; G. Schuster, 32 bls.; S. Birkenstein & Sons, 323 bls.; Victor Galaup, Inc., 115 bls.; Arkus, Inc., 67 bls.; Ernst Mayer, 45 bls.; Darmstadt, Scott & Courtney, 250 bls.; P. Garvan, Inc., 81 bls.; Chemical Bank & Trust Co., 80 bls.; International Trust Co., 151 bls.; Guaranty Trust Co., 451 bls.; Liberty National Bank, 84 bls.; National City Bank, 1,058 bls.; Chase National Bank, 50 bls.; Baring Bros. & Co., 64 bls.; Brown Bros. & Co., 40 bls.; Van Oppen & Co., 56 bls.; R. F. Downing & Co., 14 bls.; Advance Import Co., 6 bls.; A W. Fenton, Inc., 150 bls.; Order, 164 bls.

Miscellaneous Paper Stock—S. Birkenstein & Sons, 429 bls.; Baring Bros. & Co., 247 bls.; First National Bank of Boston, 170 bls.; Irving Trust Co., 213 bls.; Banca Commerciale Italiana Trust Co., 187 bls.; E. Butterworth & Co., 200 bls.; Castle & Overton, 49 bls.; R. M. Gray, Inc., 152 bls.; E. J. Keller Co., 105 bls.; J. Cohen & Sons, 16 bls.; Milton Snedeker Corp., 39 bls.; T. D. Downing & Co., 81 bls.; Order, 155 bls.

Paper

Imports of paper into the United States in July last reached a value of $12,299,117, showing a decline as compared with importations of a declared value of $14,152,739 in the same month last year, according to U. S. Department of Commerce figures. Paper imports during the first seven months of this year amounted in value to $87,642,027, contrasted with $91,457,983 in the corresponding period of last year. Imports of standard newsprint in July, comprising the great bulk of the total paper importations, were valued at $11,166,330, making a total of $77,597,869 for the first seven months of this year, against $80,908,985 in the similar time of 1929.

Paper imports in September were of moderate volume only, judging from receipts through the port of New York. Arrivals of paper of all kinds at that port last month, these data being taken from steamers reaching New York during the month and therefore unofficial, were as follows:

Printing—Perkins-Goodwin Co., 1,786 reels from Hamburg; E. Dietzgen & Co., 28 cs. from Hamburg and 63 cs. Rotterdam; C. Steiner, 9 cs. from Antwerp and 25 cs. Bremen; Keuffel & Esser Co., 73 rolls and 9 cs. from Hamburg and 10 cs. Rotterdam; F. L. Kraemer & Co., 27 cs. from Havre and 8 cs. Southampton; W. H. Bell, 7,771 rolls from Liverpool, N. S.; The Times Co., 50 reels from Gothenburg; Scripps-Howard Supply Co., 513 reels from Gothenburg; T. N. Fairbanks, 79 cs. from Trieste, 2 cs. Havre and 13 cs. Genoa; D. F. Young, 42 cs. from Bremen; P. C. Zuhlke, 86 cs. from Antwerp; F. C. Strype, 15 cs. from Rotterdam; Vernon Bros. Co., 53 cs. from Glasgow; Hoboken Trust Co., 4 cs. from Hamburg; Order, 22 cs. and 95 bls. from Hamburg, 1,939 reels and 53 cs. Bremen, 190 reels Oslo, and 512 reels Helsingfors.

Wrapping—Sylvania Industrial Corp., 160 cs. from Antwerp; M. M. Cohen, 24 bls. from Hamburg; J. P. Heffernan Paper Co., 11 bls. from Gothenburg; Thomas Barrett & Son, 11 bls. from Gothenburg; C. Steiner, 16 cs. from Hamburg; E. Dietzgen & Co., 52 cs. from Rotterdam; Wilkinson Bros. & Co., 327 reels and 16 bls. from Oslo; Borregaard Co., 238 bls. and 1,377 reels from Gothenburg; Atlantic Forwarding Co., 34 cs. from Hamburg; Irving Trust Co., 27 bls. from Gothenburg.

Cigarette—American Tobacco Co., 2,300 cs. from Bordeaux; De-Mauduit Paper Corp., 558 cs. from Havre, 1,120 cs. St. Nazaire and 552 cs. Dunkirk; Standard Products Corp., 162 cs. from Havre; P. J. Schweitzer, Inc., 281 cs. from Marseilles; International Souvenir Import Co., 15 cs. from St. Nazaire; Chase National Bank, 60 cs. from Havre; H. H. Strauss, 286 cs. from Havre and 515 cs. Dunkirk.

Writing—J. A. Hearn & Son, 4 cs. from Antwerp and 5 cs. Havre; Dyson Shipping Co., 19 cs. from London; Distinctive Writing Paper Co., 11 cs. from Havre; Globe Shipping Co., 11 cs. from Southampton; Guibont Freres & Co., 13 cs. from Havre and 5 cs. Southampton; Stern Bros., 8 cs. from Havre; B. Altman & Co., 15 cs. from Southampton.

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A new Starch beater-size, requires no cooking. Permits use of lower steam pressure in drying cans. Produces finer grain in paper. Improves surface of the sheet. Make a practical test and note the improvement in your sheet.

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Replacement In All Makes

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ZEOLITE WATER SOFTENERS

PROPERTIES

Weight per cu. ft. air-dried	93 lbs.
Effective size	0.36
Uniformity coefficient	1.50
Salt requirement lbs. per cu. ft.	1.5
Exchange value grains $CaCO_3$ per cu. ft.	2800
Time for complete regeneration	10 min.

Exceptional Hardness and Durability.
100% SOFT water to end of run.

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CLAYTON, NEW JERSEY

THE DRAPER FELT

Unexcelled for strength, openness, resiliency, and general running qualities. Made to meet the most exacting conditions on all types of machines and all kinds of papers. Only one grade and that the highest.

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Woolen Manufacturers Since 1856

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Is Revolutionizing the Whole Paper Making Industry

If your Paper Machines are not equipped with Press Rolls of BARRE GRANITE you are not getting the results that you should get, for it is a recognized fact that granite rolls are much superior to any others and Barre Granite the best of all. Let us tell you about them.

Jones Brothers Company

BARRE, VT. BOSTON, MASS.

Filter—H. Reeve Angel & Co., 34 cs. from London, 27 cs. Southampton and 35 bls. Gothenburg; C. Sleicher & Scholl, 16 cs. from Hamburg; E. Fougera & Co., 123 bls. from Bordeaux; J. Manheimer, 141 bls. from Southampton.

Tissue—W. J. Byrnes & Co., 3 cs. from Southampton; R. F. Downing & Co., 3 cs. from Havre; D. C. Andrews & Co., 6 cs. from Liverpool.

Hanging—C. A. Haynes & Co., 22 bls. from London; A. C. Dodman, Jr., Inc., 10 cs. from Antwerp; J. E. Bernard & Co., 8 bls. from Bremen; S. Stern Stiner & Co., 2 bls. from Bremen; Bush Service Co., 7 bls. from Liverpool; W. H. S. Lloyd & Co., 10 cs. from Rotterdam; Guaranty Trust Co., 17 cs. from Hamburg; Chase National Bank, 2 bls. from Bremen; R. F. Downing & Co., 12 cs. from Southampton and 18 cs. Yokohama; Irving Trust Co., 6 cs. from Hamburg; F. L. Kraemer & Co., 9 cs. from Southampton; Order, 36 cs. from Rotterdam.

Drawing—Keuffel & Esser Co., 87 cs. and 13 rolls from Hamburg; H. Reeve Angel & Co., 5 cs. from London and 9 cs. Southampton.

Photo—Globe Shipping Co., 157 cs. from Bremen; Gevaert Co. of America, 183 cs. from Antwerp; J. H. Schroder Banking Corp., 50 cs. from Bremen; J. J. Gavin & Co., 9 cs. from Southampton; P. C. Zuhlke, 3 cs. from Antwerp.

Board—Irving Trust Co., 9 cs. from Hamburg; Lagerloef Trading Co., 378 bls. from Kotka and 14 bls. Helsingfors; H. Fuchs & Son, 67 bls. from Gothenburg; Roger & Gallet, 15 cs. from Havre; Houbigant, Inc., 11 cs. from Havre; International Acceptance Bank, 12 cs. from Antwerp; Wilkinson Bros. & Co., 34 rolls from Gothenburg; Progressive Fibre Specialty Co., 14 bls. from Gothenburg; Coty Progressing Co., 29 cs. from Havre; Order, 40 bls. from Hamburg.

Miscellaneous—Hensel, Bruckman & Lorbacher, 38 cs. from Hamburg and 8 cs. Bremen; Bank of America, 26 cs. from Hamburg; Norwood Co., 4 cs. from Hamburg; Borden & Riley Paper Co., 5 cs. from Antwerp; Bowling Green Storage Co., 46 cs. from Antwerp; B. F. Drakenfeld & Co., 72 cs. from Liverpool; Bernard Meiners, 10 cs. from Hong Kong; R. C. Ritchie, 5 cs. from Hong Kong; S. Gilbert, 30 cs. from Bremen; Steiner Paper Corp., 23 cs. from Rotterdam; Pennsylvania Railroad Co., 5 rolls from Antwerp; Keller-Dorian Paper Co., 24 cs. from Havre and 13 cs. from Marseilles; J. Munro & Co., 11 cs. from Havre; Coenca-Morrison Co., 19 cs. from Havre; Japan Paper Co., 7 cs. from Havre, 2 cs. Southampton, 10 cs. Kobe and 3 cs. Gothenburg; Heemsoth & Basse, 84 bls. from Rotterdam; C. Bruning, 14 rolls from Rotterdam; W. J. Byrnes & Co., 2 cs. from Hamburg; Meadows, Wye & Co., 3 cs. from Hamburg and 2 cs. Havre; G. Borgfeldt & Co., 5 cs. from Antwerp; Cheramy, Inc., 7 cs. from Havre; International Forwarding Co., 27 cs. from Antwerp, 4 cs. Hamburg and 32 reels Glasgow; Globe Shipping Co., 55 cs. from Rotterdam, 4 cs. Southampton, 5 cs. London, 2 cs. Bremen, 9 cs. Hamburg and 4 cs. Dunkirk; American Express Co., 100 cs. from Havre and 59 pkgs. Hamburg; Causon & Montgolfer, 10 cs. from Havre; Whiting-Patterson Co., 4 cs. from Southampton; A. W. Putnam, 10 cs. from Hong Kong; Rohner, Gehrig & Co., 2 cs. from Hamburg; D. C. Andrews & Co., 3 cs. from Hamburg; International Acceptance Bank, 20 cs. from Rotterdam; W. A. Foster, 3 cs. from Southampton; Pacific National Bank, 9 cs. from Hamburg; F. Murray Hill, Inc., 5 cs. from Bremen; Kleenex Co., 6 cs. from London; E. Dietzgen & Co., 101 cs. from Hamburg; Bush Service Co., 7 cs. from Antwerp; F. L. Kraemer & Co., 29 cs. from Bremen and 98 bls. Gothenburg; J. Beckhardt & Co., 2 cs. from Rotterdam; W. L. Haas, 13 cs. from Rotterdam; Tamm & Co., 2 cs. from Rotterdam; Hurley-Johnson Co., 16 bls. from Liverpool.

Lumber Industry to Make Formal Request for Exclusion of Russian Lumber

Although the short selling of wheat by Russian government agency in the Chicago market is the latest evidence of the unrest caused in American industry by Soviet activities, it was learned recently that the lumber industry is not content with what it considers a failure to enforce existing laws applicable to imports which are in unfair competition with domestic products. The National Lumber Manufacturers Association is preparing to make a formal request that unlawful imports of lumber be rigidly prohibited in accord with the decree of Congress.

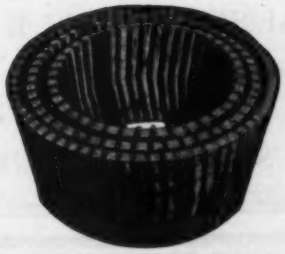
These provisions include Section 307 of the Tariff Act, which excludes the products of convict-labor; Section 303, providing for countervailing duties on imported merchandise which has had the benefit of a direct or indirect bounty or grant from a foreign government; Section 337, which authorizes penalty duties or embargo on articles distributed under unfair competitive methods; the extra, or anti-dumping, duties provision of the tariff laws (Sec. 201 of the act of 1921); and Section 304 of the 1930 act, which requires the marking of imported articles in legible English words with the name of the country of origin.

Stephens-Adamson Mfg. Co., conveyor and screen manufacturer of Aurora, Ill., announces the appointment of Gordon F. Daggett as manager of its Wisconsin territory, with offices at 735 E. Briarwood Place, Milwaukee, Wis. Mr. Daggett has specialized upon conveying and screening machinery and is also known in Wisconsin as a capable designer of conveying and material handling equipment for industrial plants.

Jones

A name that has won a world-wide reputation through 75 years devoted to paper-making progress

JONES
GREY-LOCK
ASSEMBLED JORDAN FILLING



Filling nested for shipment

FURNISHED in bronze or steel and in any type. Installed in a fraction of the time required for the usual type of filling. The Jones reputation is international.

PAPER-MAKING MACHINERY E.D. JONES & SONS COMPANY ESTABLISHED 1829 PITTSFIELD, MASS.

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PITTSFIELD · MASSACHUSETTS
BUILDERS OF HIGH GRADE MACHINERY FOR PAPER MILLS

Morey Paper Mill Supply Co.

Vulcan Brand Mark

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Sole Selling Agents

"LAMBETH" COTTON TRANSMISSION ROPE
and EGYPTIAN COTTON ROPE FOR SHEAHAN CARRIERS
Careful, Intelligent, Quick Service

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ANIMAL SIZING GLUE STOCK

LARGEST SPECIALISTS IN AMERICA ON

FINE WRITING PAPER SIZING

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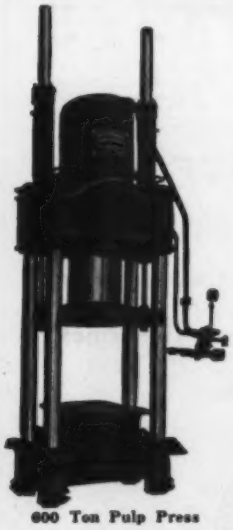
ROEPER TRAVELING CRANES

HAND POWER *and* ELECTRIC

Floor or Cage Controlled

We specialize in cranes up to 10 tons capacity and can offer quick shipments

ROEPER CRANE & HOIST WORKS, Inc.
1724 North 10th St., Reading, Pa.



600 Ton Pulp Press

SOUTHWARK

Hydraulic Equipment for Pulp and Paper Mills, Wall Board Plants, Etc.

PULP PRESSES
BALING PRESSES
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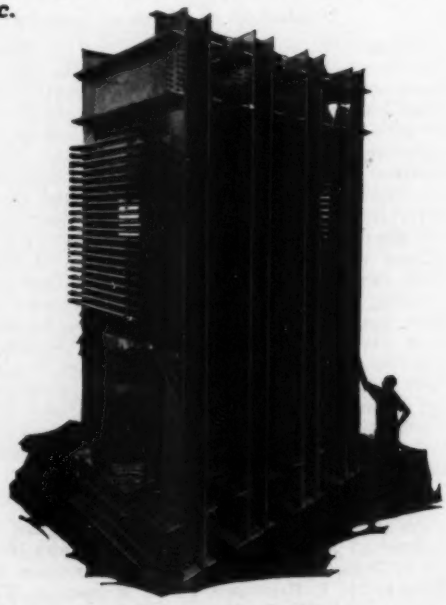
PULP TRUCKS
HYDRAULIC PUMPS
ACCUMULATORS
VALVES, FITTINGS, ETC.

Southwark Hydraulic Equipment is the choice of the largest and best known Pulp and Paper Mills throughout the country. They find Southwark products give the most efficient service under exacting conditions. Write for Bulletin No. 14.



2000-ton 12'-6"x4'-6"
20 Opening Wall Board Press

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PHILADELPHIA, PA.

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Foreign Trade Opportunities

The following foreign trade opportunities are issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Those interested are requested to communicate with the Bureau at its offices in Washington or New York or its branch offices in other cities, in every case mentioning the number of the inquiries referred to.

No. 47319—Paper milk bottles. Rosario, Argentina. Purchase and agency desired.

No. 47270—Cartons, waxed, for cream and honey, and glazed colored paper chocolate cups. Christchurch, New Zealand. Agency desired.

No. 47317—Chemical wood pulp. Milan, Italy. Purchase desired.

No. 47238—Newspapers, overissued. Bombay, India. Purchase desired.

No. 47244—Plaster board. Christchurch, New Zealand. Agency desired.

No. 47285—Tags, shipping, manila, gummed. Toronto, Canada. Purchase desired.

No. 47260—Tissue, fruit wrapping, printed. Christchurch, New Zealand. Agency desired.

No. 47311—Wood pulp. Turin, Italy. Agency desired.

No. 47250—Wrapping paper printing machinery. Boras, Sweden. Purchase desired.

No. 47228—Brimstone. Helsingfors, Finland. Agency desired.

No. 47379—Insulating board. Elizabethville, Belgian Congo. Agency desired.

No. 47381—Overissued newspapers. Karachi, India. Agency desired.

No. 47331—Paper tire wraps. Montreal, Canada. Agency desired.

No. 47378—Toilet paper of cheap quality. Lisbon, Portugal. Agency desired.

No. 47428—Bond paper, kraft grocery bags, coated book paper, white and manila envelopes, and bristol boards. Kingston, Jamaica. Purchase desired.

No. 47546—Pulp paper. Paris, France. Agency desired.

No. 47557—Bottle caps, milk, of cardboard or paper, large quantity. Rotterdam, Netherlands. Purchase desired.

No. 47599—Pulps, sulphite and soda, bleached. Rotterdam, Netherlands. Agency desired.

No. 47558—Roofing paper with burlap embedded. Copenhagen, Denmark. Purchase and agency desired.

No. 47543—Wall papers, high quality. Zurich, Switzerland. Agency and purchase desired.

No. 47600—Wrapping paper, flexible, oiled. Liverpool, England. Purchase desired.

No. 47609—Paper bags, and tissue paper for wrapping bread. San Juan, Porto Rico. Purchase and agency desired.

No. 47650—Paper bags, and wrapping papers. Glasgow, Scotland. Purchase desired.

No. 47709—Insulating board. Copenhagen, Denmark. Agency desired.

No. 47710—Newsprint paper, white, standard. Palermo, Italy. Purchase desired.

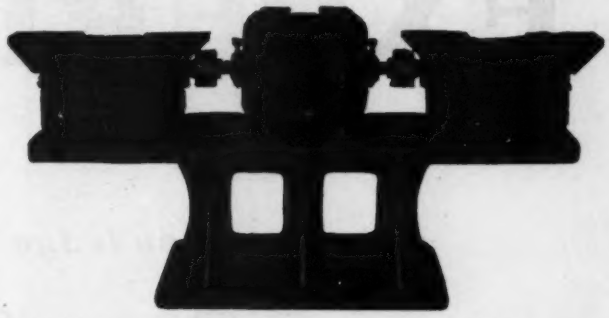
No. 47669—Kraft, brown, tissues, greaseproof, strawboards, and blotting papers; cream and colored writing and bond; duplicator, M. F. tints and covers, white and tinted boards, and paste and enameled boards. Glasgow, Scotland. Purchase and agency desired.

Frederick Kaye of Rubber Latex Fame

Frederick Kaye, of Manchester, England, the inventor of a process for incorporating rubber latex with paper fibers that attracted much attention a few years ago, is dead at the age of 64 years.

It was in October, 1922, at a meeting of the Technical Section of the Paper Makers' Association of Great Britain and Ireland, that he presented his first paper on "Rubber Latex in Papermaking." The commercial application of rubber latex in the fabrication of waterproof papers and specialties is being studied in the United States by the United States Rubber Company, who now own the world patents of Kayes Rubber Latex Process, Ltd., of Manchester, England.

Straight Head Concave Head



Motor Driven Model shown. Also made in Belted Types.

MURRAY WOOD CLEANER

Used for

Barking Slabs, Edgings and Sawmill Refuse of any kind to make wood chips.

Also used very successfully on *round pulpwood* to remove ingrown and stubborn spots of bark from pieces that do not bark clean in the drum due to curvature, protruding knots, etc.

SOLVES CAPACITY PROBLEMS.—Place one of these machines at the drum discharge and instead of returning wood with slight defects, clean them on this machine and make room for another piece of rough wood in the drum. You gain two pieces in this way.

PRACTICAL.—We have many in satisfactory operation. Operators say they are a great help. They can help you as well. Let us show you how.

Also furnished in Duplex Combination unit of Barker on one end and Knot Saw on the other, for removing entire knot.

SEND US YOUR INQUIRIES.

Everything for the Wood Room

D. J. MURRAY MANUFACTURING COMPANY

WAUSAU, WISCONSIN

EXPERIENCE

Knowledge gained from over 50 years of making Wires for American and Foreign paper makers has led to the development of looms of our own design; wire drawn to specification in our own plant; skilled, experienced operators, and a product giving long and dependable service.

Appleton Wires
are good wires
APPLETON WIRE WORKS INC., APPLETON, WIS.

New Catalogues, Books and Publications

Barnstead Still and Sterilizer Co., Inc., Boston, Mass.—This company has just issued a revised edition of its handbook, Catalogue "B," which describes the modern use of water-distilling equipment in all fields. Copies upon request.

Bristol Company, Waterbury, Conn.—This company is now offering to industries a complete line of air-operated control apparatus. Catalogue No. 4000 just issued is devoted to a description of this equipment, gives operating information illustrations and tables. An insert lists prices and directions for ordering. Copies upon request.

Brown Instrument Co., Philadelphia, Pa.—This company has just issued a new catalogue featuring Brown indicating, recording and automatic control pyrometers. A comprehensive resumé of the theory and practice of applied pyrometry is presented, together with descriptions and illustrations of all instruments, thermocouples, protecting tubes and other required equipment. Another booklet, "The Era of Automatic Control," illustrates the use of Brown Automatic Control Instruments in a large number of leading industries.

Buffalo Forge Company, Buffalo, N. Y.—Two new products are being introduced by this company: The Buffalo Unit Gas Heater is described in Bulletin No. 2754; the new Model "B" Breezo-fin Unit Heater which is made in eight sizes is illustrated and fully described in Bulletin No. 2768.

Dodge Manufacturing Co., Ltd., Toronto, Can.—This company has just issued the second number of a new publication, "Materials Handling News," which, although an advertising medium promises to contain much information of a general nature. This paper is edited and publishedbythecompany's engineering department, the leading article of each issue will so far as possible be a reprint of an article on the subject of materials handling from one of the leading technical or trade journals. Copies upon request.

Falk Corporation, Milwaukee, Wis.—A new bulletin, No. 230, is devoted to descriptive matter relating to this company's complete standardized line of parallel shaft herringbone speed reducers. The function and design of this line of speed reducers are very well outlined, the various units are described, and there are numerous rating tables to aid in selecting the proper unit. Among a number of pages illustrating installations in various industries is a page devoted to paper mill installations.

Jeffrey Manufacturing Co., Columbus, Ohio—A new bulletin, No. 510, describes the new Jeffrey Flextooth Crusher, which has been designed to meet the increasing demand for a unit that will produce smaller uniform sizes of coal than can be readily produced by the ordinary roll crusher. Copies upon request.

Link-Belt Co., Chicago, Ill.—A folder just issued, No. 1248, describes this company's "Cub" Portable Belt Conveyor. There is a description of the machine, its parts, and a comprehensive list of the industries in which this type of machine has been successfully used. There are also many illustrations showing the machine at work. Copies upon request.

The Permutit Company, New York City—A new bulletin "Permutit Continuous Blowoff Systems" is just off the press and gives a description of recent development in the control of concentration of boiler salines. This booklet takes up briefly how the demand for steam of high quality which eliminates many operating difficulties, has created the need for a simple automatic means of boiler blowoff control, and sets forth the performance of the Permutit System as filling this need automatically and economically.

Quigley Company Inc., New York, N. Y.—A new booklet just off the press describes Annite which is defined as an all-purpose cleaning compound, largely of vegetable origin. This product is recommended to have remarkable detergent power due to its highly active colloidal properties and in addition, to be desirable and effective as a germicide and deodorant. Among the industrial uses, it is recommended for general cleaning, washing felts and use in the engine room in paper mills.

Sherman Corporation, Boston, Mass.—This well-known organization of industrial engineers has published a folder setting forth a summary of the problem encountered in its study of the pasting, lining, cutting and shipping department in the Philadelphia plant of Container Corporation of America, together with the recommendations made and savings effected.

Whiting Corporation, Harvey, Ill.—This company's latest product is the Hi-Lo Crane, which answers the demand for cranes requiring low headroom. This crane is simple in design and will, it is said, operate with minimum power and lubrication costs. A Bulletin N-2075 gives a brief description.

BOOK REVIEWS

Canada—This is the title of a new folder that has been issued by the Department of the Interior at Ottawa. This folder contains a concise summary of the country's natural resources, their potentialities and development. There is also a map indicating natural resources and industrial areas in southern Canada, and a number of illustrations.

Another illustrated pocket-size booklet on the Maritime Provinces was recently published by the Department of the Interior, from which, the reader can, in a few moments, acquire much authoritative information about the progress and potentialities of New Brunswick, Nova Scotia and Prince Edward Island, their principal resources and development. Copies may be obtained from the National Development Bureau, Department of the Interior, Ottawa, Canada.

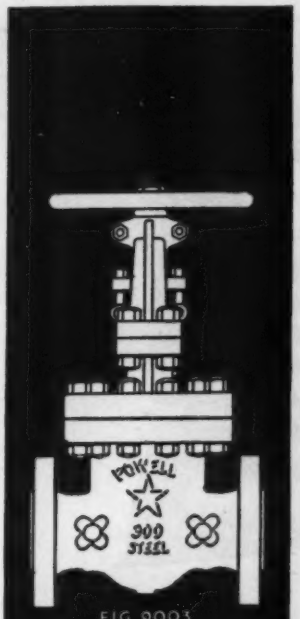


FIG. 9003
ALLOY CAST STEEL
O S & Y
GATE VALVE

★ TESTED BEYOND LIMITS

To insure safety under abnormal working conditions Powell Steel Valves are tested to limits 3½ times greater than the recommended working pressures. Moreover, the extraordinary safety factors built into Powell Steel Valves provide safe, dependable service with minimum upkeep.

They are made in Globe, Angle, Check and Gate patterns.

POWELL VALVES

THE WM. POWELL CO.
2521-31 SPRING GROVE AVE., CINCINNATI, OHIO

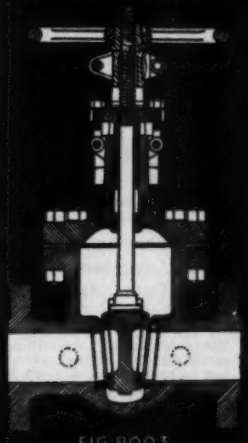
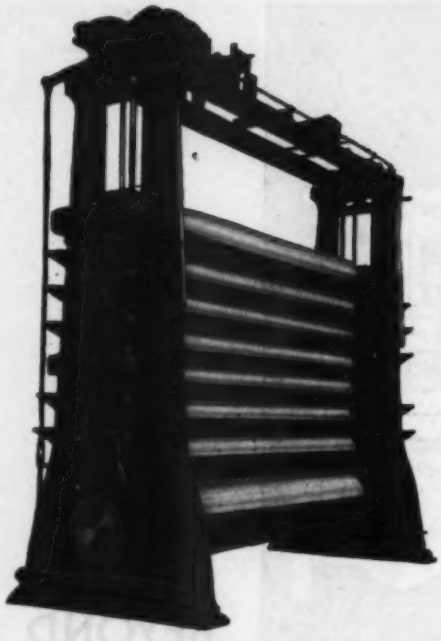


FIG. 9003
SECTIONAL ALLOY
CAST STEEL
GATE VALVE



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CHILLED IRON ROLLS

and

MACHINE CALENDER STACKS

Specified on your new machine or for the new rolls for your old stacks insures rolls of maximum hardness and perfect finish.

Calender stacks are equipped with either Electric Motor, Hydraulic, or Ratchet Lift, all operated from the floor.

Improved Oiling Systems either completely circulating with oil filters and sight feed—Ring oiling closed end boxes—or a combination of both.

LOBDELL CAR WHEEL COMPANY
Established 1836
WILMINGTON, DELAWARE

$ix-fold felt washing advantages

BY the use of economical Oakite cleaning methods, you can improve felt washing on six important counts:

1. Oakite washed felts are completely clean . . . more absorbent and soft, and neither slippery nor gummy.
2. Safe . . . no damage to felts.
3. Leaves no particles of soap or other foreign matter to cause spots in paper.
4. Shortens rinsing time.
5. Lengthens life of felts.
6. Cuts cleaning time . . . increases production.

Write for booklet describing Oakite materials and methods for doing this and many other cleaning jobs in your paper mill. Or ask us to send our near-by Service Man to talk over your cleaning problems. No obligation.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the United States and Canada

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Industrial Cleaning Materials and Methods

1864 1930

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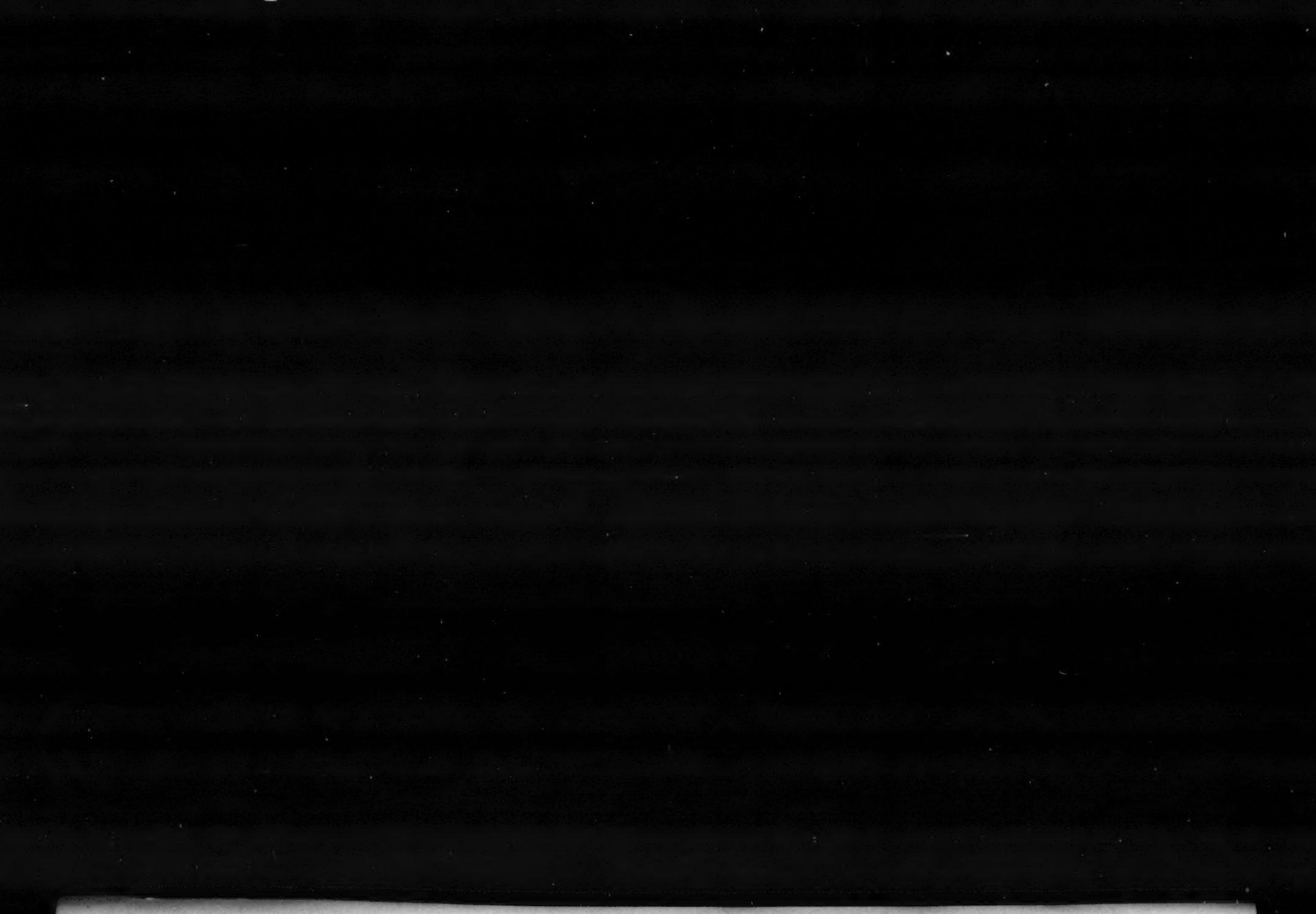
For EVERY GRADE of PULP & PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made *the first endless paper machine felts manufactured in America.*

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

■

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